

Apple2000

THE NATIONAL APPLE USERS GROUP



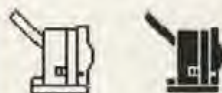
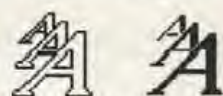
APRIL 1991

VOLUME 6(2)

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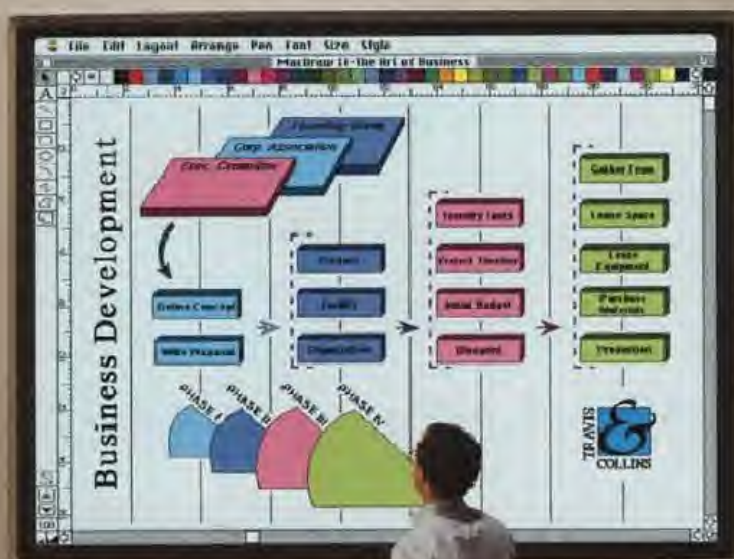
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CLARIS

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Apple2000 supports users of all the Apple computers. The ITT 2020, I, II, II+, ///e, ///c, ///c+, IIGs, IIGs+, ///, Lisa, XL, Mac 128, 512 MacPlus, Classic, SE, SE/30, Mac LC, II, IISI, IICx, IICI, IIX, IIFx and the Mac Portable

Contributions and articles for the magazine are always welcome. We can handle any disk size or format. Please send to PO Box 3, Liverpool, L21 8PY

NOTE:

The front half of the magazine is mainly for the Apple II, Apple IIGs and Apple ///. The back half for the Macintosh and Lisa. Look for the descriptive page icons.

Key:

Apple II, ///e and ///c

Apple ///

Apple IIGs

Macintosh, Lisa

Macintosh II



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There are a number of ways to contact Apple2000

If you wish to order goods or services from Apple2000 or just leave us a message, call Irene on 0951-928-4142 (Ansafone during the day). Alternatively you can Fax your order to 0951-928-0307 or write to the PO Box. If you use comms you can leave orders on TABBS addressed to the SYSOP or contact us on AppleLink (BASUG.1).

If you are experiencing problems with Apple hardware or software Dave Ward and John Arnold run the Hotlines and will try and help you.

We are very interested in the activities of local user groups, and if you have any information which you would like publicised John Lee would like to hear from you.

We reserve the right to publish, without prejudice, any advice or comments given to members as a result of letters received, in the journals of Apple2000.

A little praise for a few of our authors wouldn't go amiss. Send all comments, and contributions, via the PO box, especially suggestions about what you would like to see in your magazine.

Chairman's Corner

Apple2000 1980-1991

I am writing this having just returned from the MacWorld show at the N.E.C. The show was dominated by the two new printers introduced by Apple that week. The pricing of these printers has turned the computer world upside down once again. It is now very clear what Apple's strategy for the 90's has become. They no longer see themselves as addressing the high end business or graphics market, but spanning the complete range of computer solutions from simple word processing to advanced multimedia and graphics.

It is now possible to buy a Macintosh with hard disk and laser quality printer for just over £1000. This time last year you would have had to pay nearly £3000 more to have the same facilities from Apple.

If you want more speed and memory power than the Classic can give you, then you need to pay more. That is a reasonable situation to my way of thinking as even with the cheapest Mac Classic you will not be limited by your choice of software. With only a few exceptions, and these are mainly the lack of colour on the Classic, all Macintoshes will run all Macintosh software. This limitation applies to the top end SE/30 as well of course.

There is a bonus in using a Macintosh. All Macs are now fitted with the high density SuperDrive. With the addition of a program like PC Access, they can read and write to an IBM 3.5 disk directly and with consummate ease.

Having experienced the direct reading of a WordPerfect file into the WYSIWYG environment of MacWrite II and writing it back out again to an IBM disk, I can testify to the transparent compatibility of the Mac with the IBM.

What was interesting to me at the show was the number of people who were just about to get their first Macintosh. At previous shows it was the number of people who were only thinking of purchasing that were dominant. The main complaint of these new owners was their horror when they realised that software could well cost them more than the cost of the computer itself. I predicted last year that the cost of software would come down. So far only a few dealers are trying to address this problem. The mail order companies like Camelot have been the first off the mark. Others I hope will follow. Camelot is also trying to address the cost of peripherals as well. Though this is not so immediate a problem to owners.

I throw down a challenge to the software publishers. Many people just do not know which package to buy. When faced with the vast choice and conflicting claims and high prices, they may well pirate a copy just to see if it works. When they have decided what they wish to use, they may well stick with the pirated version because of cost!

It would not be too difficult for the publishers to manufacture 'cut-down' or limited versions of their software. These could perhaps generate limited sized documents or have features suppressed. The files that are generated should be transparent to the full package of course. These 'cut-down' programs would sell for less than their standard equivalent. A satisfied customer would soon want the full package. There should then be a suitable upgrade path to allow them to get the full program. Even if he did not upgrade, the publishers would sell more programs and so should be a happy with the volume sales. It would also help to cut down on piracy.

Aldus already sell a special 'Education' version of PageMaker that is limited in this way. That version could easily be marketed as PageMaker Junior without any delay.

I will keep a keen eye out on developments. It would be nice to think the industry will become as responsive as Apple has been to market demands. I just hope it does not take as long to make up their minds as Apple themselves did.

Ewen Wannop

Annual subscription rates are £30.00 for UK residents, £35.00 for E.E.C. residents and £40.00 for other overseas members.

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This journal is published bi-monthly by BASUG Ltd as a benefit of membership in February, April, June, August, October and December. The Apple Slices newsletter is published in the intervening months. The copy date is the 1st day of the month preceding publication. Advertising rates are available on request.

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This issue was prepared using Aldus PageMaker™ 4.0, Microsoft Word™ and Claris MacWrite™.

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Apple II Macintosh Reviews

Ewen Wannop
Norah Arnold, Irene Flaxman
Elizabeth Littlewood

Many thanks to all those who work behind the scenes and who receive no personal credit. These people are the stalwarts of Apple2000.

Additional thanks go to Val Evans for designing our front cover, and to Walter Lewis of Old Roan Press (051-227-4818) for our printing service.

Apple2000 are Founder Members and
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Letter Box



I note your comments and would say that the magic of the Apple Mac computers now depends on the software - in the early days, when we had about three programs to choose from, it was true to claim that the computers were fast and versatile.

In other words, today's criteria are based on the speed and versatility of the PLATFORM, not on the computers.

Now we all know that people like me, who don't agree with what big business says, are always opposed - but I think I can say with some assurance that two more little boys will one day make another computer in their garage. It will be just like a lot of other computers (only faster and more versatile), but will have a little swing-ticket attached to it saying "If you wish, you can buy software for *this* computer that is **guaranteed** to work first time, every time, and with all the other **guaranteed** software too". So let's all sit back and wait for the future to unfold ...

You have a great idea there, but I suspect it would be impractical and too expensive to implement. Perhaps all we can expect is that Apple tighten their guidelines. They have an excellent opportunity with the release of System 7.0 to do this. Are they up to the challenge?



Here is the problem, one of my colleagues has encountered. He needs to transfer files from PFS file on the Apple II to the Mac (and he does not need any special format on the MAC). The problem is that PFS on the Apple II doesn't accept serial output. So it isn't possible to use, for example, Kermit taking the data printed to the serial

So, has anybody some idea how to do this? I must say that we have PFS on the Apple II but also on the MAC (but nowhere in the documentation we found a word on compatibility).

☐ I have no information on the PFS file structure, though the file type is defined in the latest list from Apple. Also I am not familiar with PFS File.

If anyone else can think of a solution, please let us know and we shall pass this on to Eric over AppleLink.



I currently have an Apple II+ with an 80 column card and a CCS 7710-2 serial card, and I was wondering if you could give me an idea of what I would need, in terms of software and hardware, to set up a modem on my computer. Having fooled around a bit on Micronet with another computer, I'd be interested in using that, but also bulletin boards like TABBS.

I bought a Protek 1200 acoustic modem, at one of these rallies. (for £10.00!) which has a non-standard RS232 port (a 5-pin stereo-din-socket)

If you have an urgent problem you should ring the Hotline to get help. Letters and Fax submitted to Apple2000 will normally be dealt with as part of the editorial content of the next magazine. We shall endeavour to answer problems if at all possible before publication, but due to the large volume of letters received this may not be possible in all circumstances. Please submit all letters and articles to the magazine on disk wherever possible. The disks will be returned to you when the magazine is published. If you have a modem, send us letters, articles and Public Domain programs either to 84:BSG001 or to TABBS 110:115:24:1001

which I thought I might be able to wire up to the serial card's 25-pin RS232 socket, but haven't had any luck so far. The modem seems to use only 4 pins:

- Pin 1 Ground
- Pin 2 Modem input
- Pin 3 Modem output
- Pin 4 Unused - seems to be a power line if the batteries are removed
- Pin 5 Answer/originate

Would you have any ideas how to wire up the answer/originate pin on the modem to the relevant pins on the 25-pin RS232 socket? Protek seem to have gone out of business, as my enquiry to them was returned marked "gone away".

What sort of software would I need to contact TABBS, or Micronet? Is there any PD or shareware that I could use? Would it support the split baud rate (1200/75) that Micronet uses?

I would be very grateful to have any comments that you could offer on the above, and I am sure that the information would be of use to other *frustrated* would-be modem users like myself! A series of articles on how to get on-line, with the various types of Apple equipment, would be very helpful.

Jon Harrington

□ Starting from the beginning, you will need some software to access the modem. On the II+ you have a limited choice available to you these days. There are some PD programs about, but most do not have the comprehensive file downloading that you would need with most Bulletin Boards and especially TABBS. If you want to access Micronet or any of the Viewdata systems, then there is only one choice open to you and that is Antelope, noth-

ing else supports Viewdata on the Apple II. Antelope is sold by Apple2000 for £25.00 inclusive. I must of course own up to be the author of Antelope. It was perhaps better known under its previous title of Data Highway when it was sold by PACE some years ago. Antelope will see the CCS serial card though you will need to change the baud rate manually on the card if you change speeds.

There is a drawback however with Antelope and many other programs for the II+. They were written in the good old days of DOS 3.3 and so do not support ProDOS directly. ProDOS is of course the preferred language these days. You can convert files between the two systems with a program like Chameleon. Chameleon costs £16 and is also sold by Apple2000.

It is not necessary any longer to have a split baud rate modem to access Prestel or Micronet. Nearly all the nodes have been changed to multi-standard modems and you can access at any speed up to 2400 baud.

I do not know the Protek 1200 modem, but from your description of it having an answer/originate pin, I would suspect it was using the 1200 part of 1200/75 and switching from receive to originate using the single carrier. There were a few modems that did this. Only specialised software would see this kind of modem and it is for all intents and purposes useless these days.

Look for a modem that has either 1200/75 (V23) or better still 1200/1200 (V22). Modems like the PACE Linnet or the WS3000 or WS4000 from Miracom are quite common these days secondhand. There are lots of other ones about, but it really depends on the depth of your pocket. The faster the modem the more expensive it becomes.

However if you try to do any serious Bulletin Board work, you will find 300/300 just far too slow for you sanity. 1200/75 is all right provided you have good clean phone lines, but is no good if you want to send any files anywhere.

We have run many articles in the past on communications. As you will have gathered it is my own speciality. I have been running some of these old articles again as they are still relevant. I shall see what I can do.

Ewen Wannop

@TABBS:

Russell Ridout

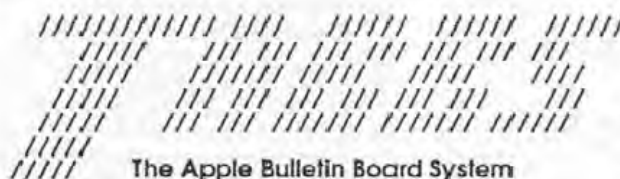
Dear Ewen,

Just a few lines which I hope will be of interest to other A2000 members - I phoned Alan Finn at Clocktower at about 3.30 - 4pm one day recently to ask about extra Ram chips for a Cirtech GS-8 Ram disk. Not only did he have some in stock (MGA quoted 7 - 14 day wait) they arrived the following morning by post!!

Couldn't be much quicker!

You may recall some time back talking in the A2000 journal of your IIGs and the disappearing 3.25in drive when daisy chained with a 5.25in unit.

I have just had the problem turn up on my system (bought from Holdens Computer Services about 18 - 24 months ago). After reading about a fix in A2-Central I phoned Holden's on the off chance, though I doubted that they could (or would) be able to do much after that length of time. However, their Peter Carter (Service Dept) said he would take the matter up with Apple as he would normally have to charge about £90 to replace the daisy chain board.



The Apple Bulletin Board System

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Modem: PACE Ultralink 32 using V42 LAPM MNP

□ The TABBS message system is more than just a Bulletin Board. With a Shopping Mall where you can browse the Apple2000 catalogues and order the goods you require; a library with over 75mb of compressed files for the Apple II, IIGs and Macintosh; the NewsBytes™ news files updated weekly bringing you the latest in world computer news; a private and public E-mail service; file transfers that can be enclosed in private or public mail; message areas covering many topics including the Apple II, the IIGs and Macintosh; with Xmodem, 1k Xmodem (Ymodem) file transfers; multi-speed access at all common speeds; 24 hour operation; and much, much more make TABBS the premier Apple Bulletin Board serving Europe. Give TABBS a call today!

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The Apple2000 Bulletin Board System

>>>> TABBS TOP MENU <<<<

<#>Endcall <.>Utilities
<.>Time <G>odbye

<1> Apple II folder
<2> Apple IIGs folder
<3> Macintosh folder
<4> Apple2000 folder
<5> Developers folder
<6> Public areas

<D>ownload Libraries
<M>ailbox
<N>ews Columns
<A>vertisement Hoarding
<S>hopping Mall
<W>hat's new on TABBS
<H>elp files for TABBS

He subsequently advised that Holden's would do the modification for free - so off went my drive, and a week or so later it came back and so far (touch wood) there have been no further problems. I asked when I sent off the drive if they would let me know if they didn't want this publicised and they have NOT said they did not want this upgrade known by A2000 members.

So - another bouquet for Holdens Computer Services. I know who I will be dealing with in future.

Russell Ridout

P.S. Clocktower also quoted a far better price than MGA for the chips.

□ Thanks Russell, what more can I add to that. Alan Finn has been trying to provide a reliable, fast and cheap service to the Apple community. It looks like he is succeeding!

I have not had my drive done yet, but it looks like I shall follow your route. It would be interesting to know if we need both 3.5 drives done, or whether only one would suffice.

Ewen Wannop

Fulready Road
London

Dear Editor,

I was glad to see that Graham Doubtfire is a fellow supporter of AppleWriter. I use it in preference to AppleWorks and would like to expand on some of its useful tricks, particularly the WPL mail-merge facility that Graham has played down.

Here is the program I use, based roughly on the example in the manual but more suitable for my needs as secretary of an amenity society (See Figure 1).

It would be very irksome to enter names and addresses with the numbers and other characters in the right place so I wrote a simple basic program which requires the user to type in form of name used in address (N\$), Street address (A\$), Town (T\$), postcode (PC\$), greeting (F\$), job or phrase (J\$).

The program then writes them into a sequential file complete with numbers:

```
370 FOR W=1 TO NO (number of
    records)
380 X=3*W-2:Y=3*W-1:Z=3*W
```



```
395 PRINT "<"X">"N$(W)
400 PRINT A$(W)
410 PRINT T$, "PC$(W);""
420 PRINT "<"Y">"F$(W)""
430 PRINT "<"Z">"J$(W)""
440 NEXT W
```

Subsequent additions and corrections can be made from the word-processor.

When I first attempted to transmit letters via Telecom Gold I found that most of the text had disappeared. This was because AppleWriter stores the text without the carriage returns which occur at line-ends. The letter must be stored first in a formatted form which includes the CR's. The technique for doing this is described in the DOS 3.3 manual but not in the manual I received for the PRODOS version. The method is the same:

Type CTRL-P (CR)
type PD8 (CR) (in other words, send the letter to slot 8. Since there are only 7 slots the computer knows you want to print to a disc. It asks for a file name.)

Arthur Robinson



Figure 1

```
START  PIN Name of address file? -$A
        PIN Name of letter? -$B
        PSX 1 (set x to be 1)
LOOP   NY (clear screen)
        L$B (load the letter)
        B (go to the top)
        F! (ADDRESS)!! Find "ADDRESS" & replace by blank
        Y?
        L$A!<(X)>!^!N Load address file from "1" to ""
        PGO FOUND (go to "found". If at end of
        PGO QUIT (data goto Quit)
FOUND  PSX+1 (Increase x by 1)
        B (Go to the top)
        F! (NAME)!! (Find "NAME". replace by blank
        Y?
        L$A!<(X)>!^!N (From address file load from 2 to "")
        PSX+1 (Increase x by 1)
        B (go to the top)
        F! (JOB)!! (Find "JOB" & replace by blank)
        Y?
        L$A!<(X)>!^!N (From address file load from "3" to "")
        B
        PNF (print the letter")
        PSX+1 (increase x by 1)
        PGO LOOP (if there is more data go to
QUIT   NY LOOP, otherwise quit)
```

A single record of the address file looks like this:

```
<1>Mr A. Robinson
20 Fulready Road
London E10^
<2>Arthur^
<3>Civic Society^
<4>.....etc
```

and the actual letter might be:

```
Dear (NAME).
Are you still secretary of the (JOB)?

(ADDRESS)
```

Byfleet
Surrey



Dear Apple2000,

Having got an Apple //e almost a year ago, with all the hardware but without any instructions or guidelines, I'm getting a bit restless at not being able to use the thing. It's for a wholly domestic use and although I am a total novice on Apple, I have been using another machine for 3 years so I am not a complete dunce with a WP. I have to say that I do feel like it at the moment - I couldn't even work out how to run the Introductory disk you sent me!

I have two disk drives, a User's manual and an Owner's Manual though the latter is not a lot of use. I also have a Starter Disk, a Systems Master Disk and a ProDOS Users Disk and Manual (largely unintelligible, I might add). However, I don't have the ProDOS supplement to the //e Owner's manual, though I'm not really sure if it would help much anyway.

I have recently joined Apple2000 and I have to say that the prime reason for joining is to see if I can somehow get together on a one-to-one basis with another Apple //e owner who could look over my shoulder for an hour or two and point out my errors.

Basically my overall requirements are very simple - I want to use the Apple primarily as a word processor but with further, small, need for a spreadsheet and database. As I couldn't afford AppleWorks 3, I was recommended (by MGA Softcat) to get SoftSync's Trio' at £30. It seems pretty straightforward but, on my own, I haven't been able to run it properly and I have thoroughly scoured the manual to find out why I can't get further than the copy/move section

when I have followed all the instructions!

I would greatly appreciate it if you could suggest anything and I would welcome any advice you may feel able to proffer.

Ambrose Smith

 (After 7pm)

☐ I have printed your phone number in the hope that a member can help you directly with your problems. I cannot really launch into a complete tutorial on the //e in these letter pages. I hope you will understand.

If we can get you over the first hurdles, I am sure you will be able to progress from there.

Your predicament raises some interesting points. When the Apple II first appeared only enthusiasts would fork out the £1500 it cost to set up an Apple II and a couple of disk drives. With that kind of investment we would do anything to find out how the thing worked. We quickly became computer freaks so we could thread our way through the jungle it presented. The machines were never that easy to use and the documentation in many cases was appalling. Things have changed these days and our expectations are very much higher. If we come into possession of an Apple II we have probably paid no more than a £50-200 for the complete package. Starting from square one with a difficult machine, when we would expect it to be user-friendly, is hard for many of our newer members to grasp.

It is not helped by a jungle of different bits of hardware and software surviving from those pioneer days that may come with the package!

The //e is an excellent computer for word processing. I would not recommend AppleWorks 3.0 on the //e, the older version 2.0 is quite enough. Version 3.0 only really comes into its own on the IIGs.

I hope we can come up with a member who can help. In the meantime please ring Dave Ward on the Hotline. I am sure that Dave will help you get over the very first of the hurdles.

Editor

Chellaston Derby

Dear Editor,

I have an Apple //e with Computech Diplomat printer interface, Star LC10 multi font printer and a Thunder Mountain Clock card.

I would like details regarding screen dumping and how to set up my clock card for which unfortunately no handbook is available.

Kevin Potter

 (After 7pm)

☐ We do not have any details here on the ThunderClock. Perhaps a member could help out on that one please.

Screen dumps are another matter. I am not sure if you mean you want to print the text you have on the screen, or that you just want to make a graphic dump of the current screen. In the case of text, most word processors will handle that directly of course. If you want to make a graphic dump of the screen, or a dump of the displayed text screen, you will need a utility to do that for you. The main problem in doing this is that you will have to leave the program that has created the screen and run a separate utility. You cannot assume that any memory is free for a routine to be run under any existing program unless you are in Basic. In that case page 3 is always free.

Most of these screen dumps take the form of binary code that is run at a specific address. With printers being non-standard and printer cards even more so, they are usually written for a specific combination. You do not say which printer and card you have. If your printer is a dot-matrix printer you will be able to do graphic dumps. You may even find that your printer card already has this capability built in. Refer to the printer card handbook in that case.

If you would like to elaborate on your needs, we can try to be more specific, and perhaps find a member who can help directly or even write a screen dump for you.

The Boffin

 (After 7pm)

Co. Loch Garman

A Chara,

Thanks for the disks which I received yesterday.

Two problems have arisen however. Firstly, I can't seem to load CheapPaint, on disk 8, and I also cannot load disk 037, probably because I only have 512k of RAM.

As I also wish to upgrade my IIGs to 1.25 or even 2mb, I am wondering if you could advise me how to go about it. My ROM is version 01, and the memory expansion card is manufactured by Apple. I am hoping to purchase AppleWorks GS to help me with school administration, and to analyse and print a small research project in which I am involved.

Is it possible to install the fonts on the IIGs library disks on my II-Write word processor?

Please help, I've little experience of computers, and no-one around here to turn to for help or advice !!!

Aodhagan O Suird

☐ Your lack of memory is at the root of all your problems. System 5.0.4 on disk 37 and 38 (you will need both disks to install it) requires a minimum of 1.25 megabyte to install. With almost any of the IIGs operating systems running, you need more than 512k to run any of the major programs avail-

able today. AppleWorks GS will run under 1.25 megabytes but they recommend 3.0 to really make it work properly!

You have the Apple memory card now. This can be upgraded to give your machine 1.25 megabytes by buying three sets of 256k ram chips. You will need 24 in all to fill the card. Try Alan Finn at ClockTower for these (see earlier letter!). They are not difficult to install given a bit of patience.

If you want to go further than this, you should get a Cirtech Primo card (try Alan or Bidmuthin). The Primo comes with one megabyte on board. With the 256k on the IIGs this brings you to 1.25 megabyte. You can expand the Primo to 2 meg and then to 4 meg if you wish.

You will find that if you run System 5.0.4 on the IIGs, you will need at least two 3.5 disk drives. If you only have one, it would be worth getting at least 2 megabytes of memory as you could partition off one megabyte as a fast Ram disk to hold the operating system. It is a hard fact of life these days that both the IIGs and the Macintosh are almost impossible to run from floppy disks. You need a hard disk drive if you are going to do anything sensible. I am sorry to say that AppleWorks IIGs would be impossible to run sensibly without one.

Finally you ask about using the IIGs fonts on other Apple II programs. Of course all the IIGs programs expect and use them, ProDOS 8 programs except for a few exceptions cannot use them. The main exceptions are PublishIt!, Printrix and Timeout Superfont.

Editor

 (After 7pm)

Northern Ireland

Dear Apple2000,

On glancing through the Problem page of an old copy of 'Computer Shopper' I was amazed to find someone in the same predicament as myself. By that I mean we were both suffering under the impression that unless you own an IBM/PC then no-one wants to know you. I can't tell you how delighted I was to learn of your existence.

For some time now I have been trying to overcome the problem of attaching a parallel printer to my Apple //e.

When I first acquired the Apple, the printer an EP-1201A Super 5, was connected directly to a printer card, of unknown origin, in Slot 1. The software was AppleWriter. Wanting to upgrade this I acquired AppleWorks. A package with which I was familiar. The problem is that AppleWorks is apparently incompatible with the printer card. On using the print command the VDU shows the command being executed that the printer card does not use a 'standard entry point' which AppleWorks requires.

I was next advised to purchase an Apple Super Serial Card. When this was done I was left with the problem of connecting the two. I have spoken to many people/firms about this and generally the impression is, if you don't own an IBM/PC A few did say they could help me, by selling me this card or that, but as they received so few requests of this sort it would be very expensive.

I hope you can help me with this problem by recommending a tried and tested way to connect the Super Serial Card to the printer or is there an alternative software package to AppleWorks V2.0.

SSgt G. R. Dodd

□ Oh dear, you have been badly misled. The Super Serial Card will only access serial printers, and as you have a parallel one you are going to get nowhere with it. If you ever decide to buy an ImageWriter or get a modem it will come into its own.

They were correct in saying that the Super Serial Card had the correct entry points. But what that really means is that the card has firmware onboard the card that responds to a standard initialising routine being called from AppleWorks. Many parallel printer cards also have a suitable routine in firmware so they can be called as well.

Try Bidmuthin Technologies, I am sure they will be able to help you with a suitable parallel printer card.

AppleWorks 2.0 is an excellent program. Having got it, I would not contemplate anything else if I were you.
Editor

The Editors
Circled Head
Down
Circled Head
Circled Head

Dear Ewen,

Recently I bought a new copy of AppleWorks GS. It supports the LaserWriter perfectly, but scrambles the output when used with a Grappler+ and an Epson FX-105 (and uses a different scrambling with an Epson LX-800). It is clearly trying to work, but there are spurious characters and the 9th pin (?) leaves a white strip, and sometimes one pin trails for a while. It is running under GS/OS 5.0.2. When first run, it asked for a Graphiccard driver - but adding this has no obvious effect. I had similar results with a copy of an older version from a friend.

Can you suggest a fix, or are there suitable drivers in the library, or will something like 'Harmonie' be needed?

Dave Stewart

PS Should any members of Apple2000 use Publish It! and want laser quality printing, I would be willing to supply a service provided there was not excessive amounts. They would have to send the saved document (5.25" or

3.5" media), and have prepared the document with the font-widths in the 'select-printer' menu set to LaserWriter Plus. As yet I have not found a way to print files containing PostScript saved to disc with LaserPrep.

□ AppleWorks GS in its better print mode uses a graphic dump to send to the printer. I would suspect that something is not quite setup correctly. My first thoughts would be that you do not have the handshake between the printer and the IIs working smoothly. This would give the results that some of the output worked and some did not and spurious characters creep in. A horizontal white stripe usually means that the printer is advancing too far between lines. This is usually changed by switches on the printer. You should refer to the handbook to see how to change those.

However it may be that it is simply the printer driver that is not sending the right kind of information to the printer. This is more difficult to deal with. The Epson printer driver currently shipped with system 5.0.4 is the only one I know of. If that does not work for you then it is going to be difficult to find one that will.

The Boffin

The Editors
Circled Head
Circled Head
Circled Head
Circled Head

Dear Ewen,

Do you have any further information on the Megaboard Hard Disk controller from Birre Genberg? Prolim have moved. No reply from DMA or Prisma Data Systems, Oberhausen, Germany.

I have collected a very small Apple II bibliography, about 109 literature references. Does anyone else do this, my feeling was that your memory about the Megaboard was very slick?

Peter Davis

□ Try ICT GmbH, Herr Zenglein, 87740 Dillingen, Germany. Tel: +49-89-4000000. They were the last place we knew of with the board.

Ewen Wannop

Ferndown
Dorset

Dear Apple2000,

I am prepared to help as a Mac specialist on the Hot Line.

My phone number is 01932-404767 and I can be contacted from 8.30 to 17.00 on working days. The number has an answerphone, so calls could be left at any time.

Specific specialities are Hypercard scripting, Excel, MS Word 4, MacAuthor and ResEdit.

A.W. Harmer

□ Thank you. **Editor**

Compuserve

□ We have asked you all to send us your Compuserve/Forum ID's. We now have some more added to our collection and these are printed below. There are still some of you that have not responded. We cannot contact you online unless we know who you are. Please send us your ID's either to the Apple2000 ID 76004,3333 or to the PO Box in Liverpool or of course to the Sysop of TABBS (0225-743797).

Apple2000	76004,3333
John Beattie	100012,360
David Collins	100016,3060
Gary Doades	100016,2353
Felim Doyle	100016,1151
David Evans	100014,1161
Mateen Greenaway	100016,602
Dale James	100016,1152
Bryn Jones	71307,1457
Mark Hooper	100014,374
Peter Kemp	100016,1172
Elizabeth Littlewood	100016,401
John Maltby	100014,2216
Mark O'Neill	100016,476
Steve Perry	100013,365
Jeremy Quinn	100016,560
John Richey	10006,1037
Russell Ridout	72007,211
Arthur Robinson	73457,3614
James Southward	73767,1336
Ahmet Turkistanli	100016,3365
Andreas Wennborg	100012,342
Ewen Wannop	76224,211

AppleLink

□ Many of you will already be members of AppleLink™ and others may be thinking of joining. For simple E-Mail it cannot be beaten. It will also keep you up to the minute with what is happening at Apple headquarters. We would like you to send us your contact ID's to add to this list.

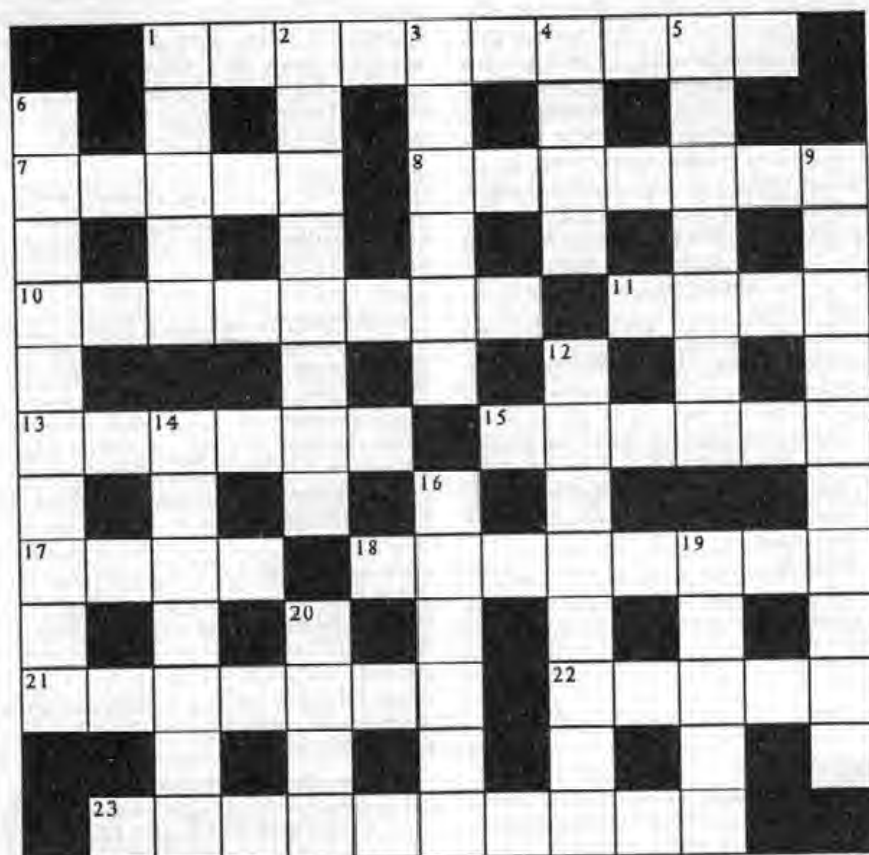
Apple2000	BASUG.1
Cumbrian Computers	CUMP.COMP
Herts User Group	NA.HERTSUG
Liverpool Group	LIVERPOOL.UG
Mosaic Computers	MOSAIC.COMPU

Help Lines

□ Members having offered specialist help facilities are listed below:

A.W. Harmer (Mac)	01932-404767
Mr Armstrong (Apple II+, IIGS)	01932-603375
John Richey (AppleWorks)	01932-725000
Ken Dawson (TimeOut, ProSel)	01932-413111

Apple-pie Order



April Crossword

Rules of Engagement

The first correct entry drawn from the postbag wins first prize. Please remember to indicate which of the two prize choices you would like.

Only entries from current members of Apple2000 will be eligible.

No member of the committee or the editorial team may enter.

Our decision will be final.

Only entries received in the PO box in Liverpool before the 31st of May will be deemed eligible.

How to Contact You

Name:

Membership Number:

Address:

.....

.....

Post your completed entry to:

April Competition,
PO Box 3,
Liverpool,
L21 8PY.

Choose Your Prize

If you were to win first prize, please indicate which prize you would like. Newsroom + Clip Art Vol 3 for the Apple II's or Weltris a game for the Macintosh.

Please tick your choice:

☐ Newsroom

☐ Weltris

Clues Across

- 1 Flax derivative for bats (7-3)
- 7 To promise a high place without direction (5)
- 8 see 14 down
- 10 Obligatory shaken coin, echo (2,6)
- 11 A case in the Tuilleries (4)
- 13 Commanding officer, p-payment for drink (6)
- 15 Write one hundred and forty-nine with it (6)
- 17 Irish policeman and King form a scrum (4)
- 18 Help net a large mammal (8)
- 21 'And I shall ----- be with them that rest' (J. Milton) (7)
- 22 Consumed in directions and was consumed (5)
- 23 Rent bicycle without beginner for what seems to be automatic control (10)

Clues Down

- 1 Enter, in charge of reason (5)
- 2 Gas makes note rung out (8)
- 3 Very loud in Common Market; model result (6)
- 4 Fish-boat? (4)
- 5 Subconscious I love: spasm is stupid (7)
- 6 Large ungulate shook Norse choir (10)
- 9 Chop off soldier with class taking chance in track (10)
- 12 Political direction of castle port (4,4)
- 14,8 Plant cultivation? Unfortunately not (7,7)
- 16 Continue, but if you do you're out (4,2)
- 19 Worker in charge of caper (5)
- 20 Eyesore in West Yemen (4)



COMPUTER LOGIC? - SOLUTION

□ Ian Archibald won the December Competition. He chose Certificate Maker as his prize. The solution is printed below.

Name	H/W	S/W	Fault
Mable	Ancom	Graphol	Virus
Fable	Big Blue	Calcit	Connections
Abel	Pear	Comms	Colours off
Table	Orange	Scriber	Garbling
Cable	Sugar	Venture	No input

The small world of E-Mail

□ I received the following message the other day. The world really has got small when a few lines of text can be shunted around electronically and actually get to me intact! This message was forwarded to me over many E-Mail systems to finally reach me on CompuServe only a few hours later.
Ewen Wannop

Sender: trout.nosc.millcrash!pnet01!pro-party!pro-novapple!pro-applepi!rzeman
Received: from usenet.INS.CWRU.Edu by tut.cis.ohio-state.edu (5.61-kk/5.910130)
id AA20396; Thu, 31 Jan 91 05:34:14 -0500
Received: from gatech.edu by usenet.INS.CWRU.Edu with SMTP (5.61+ida+/CWRU-1.4-UUCPGW)
id AA27825; Thu, 31 Jan 91 05:34:06 -0500 (from ucsd!nosc!trout.nosc.millcrash!pnet01!pro-party!pro-novapple!pro-applepi!rzeman@gatech.edu for compuserve!76224.211@tut.cis.ohio-state.edu)
Received: from ucsd.UUCP by gatech.edu (4.1/Gatech-9.1)
id AA15851 for tut.cis.ohio-state.edu!compuserve!76224.211@usenet.ins.cwr.edu;
Thu, 31 Jan 91 05:34:07 EST
Received: from nosc.UUCP by ucsd.edu; id AA23527
sendmail 5.64/UCSD-2.1-sun via UUCP
Thu, 31 Jan 91 02:18:49 -0800
Received: by trout.nosc.mil (5.59/1.27)
id AA17657; Thu, 31 Jan 91 02:18:24 PST
Message-Id: <9101311018.AA17657@trout.nosc.mil>
Received: by crash.cts.com (small2.5)
id AA00926; 31 Jan 91 02:16:03 PST (Thu)
Received: by pro-party.cts.com (sendmail 1.7)
id au85913; Wed, 30 Jan 91 23:51:54 CST
Received: by pro-novapple.cts.com (sendmail 1.7)
id au85317; Wed, 30 Jan 91 23:41:58 EST
Received: by pro-applepi.cts.com (sendmail 1.7)
id au84460; Wed, 30 Jan 91 23:27:42 EST
Date: Wed, 30 Jan 91 23:26:52 EST
X-Mailer: Mail Manager (1.1 26nov90)
From: rzeman@pro-applepi.cts.com (Rick Zeman)
To: 76224.211@compuserve.com
Subject: New Mail Route

Hi Ewen.

It's amazing, but mail from here to CIS and vice-verse takes ~8 hours. Not bad. Rick

+CIS = 72677.3364

+AO = RZeman

GENie = R.Zeman

Internet = rzeman@pro-applepi.cts.com

PROLINE: pro-applepi!rzeman

UUCP: crash!pro-applepi!rzeman

ARPA: crash!pro-applepi!rzeman@nosc.mil

INET: rzeman@pro-applepi.cts.com

CLOCKTOWER GOES PUBLIC!

We now have shop premises, but with unpredictable opening hours. So... callers by appointment, or at least, please phone first. Buy any combination of 3 items from this list at the price in right hand column. Add £5 carriage to any goods less than £100. Add 15% VAT to these prices - Apple 2000 members deduct 10% from the final total. VISA & ACCESS accepted.

Beagle, TimeOut & Appleworks products		
	price each:	1 item 3 or more
UltraMacros Primer	19.00	15.00
Platinum Paint	69.00	58.00
TimeOut SuperForms	48.50	38.50
Outliner 3.0	48.50	38.50
SuperFonts Activity Guide	34.50	27.50
AW 3.0 Companion	27.50	22.00
Decision Pak	104.00	85.00
Style Pak	90.00	72.50
Performance Pak	76.00	62.50
TimeOut TextTools	34.00	27.50
DeskTools I or II	34.00	27.50
FileMaster	34.00	27.50
Graph	62.00	49.50
PowerPack	34.00	27.50
QuickSpell	48.50	38.50
ReportWriter	55.00	44.00
SideSpread	34.00	27.50
SpreadTools	41.00	33.00
SuperFonts	48.50	38.50
TeleComm	48.50	38.50
Thesaurus	34.00	27.50
UltraMacros	41.00	33.00
MacroEase	27.00	22.00
MacroTools I or II	17.50	13.00
GS Font Editor	34.00	27.50
MiniPix 1.2 or 3	20.00	16.50
Program Writer	34.00	27.50
Beagle Compiler	52.00	41.50
Point-To-Point	69.00	55.00
BeagleWrite GS	69.00	55.00
GS Desk Accessories	41.00	33.00
Clip Art vol 1	34.00	27.50
Font Library vol 1	34.00	27.50
BeagleDraw	62.00	49.50
BeagleWrite	55.00	44.00
Desk Acc, Pic Mgr or FontPaks	27.00	22.00
Prosel 8 (5.25" or 3.5")	26.00	18.00
Prosel 16	42.00	35.00
New 'Professional' Prosel package available in April		
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Double Data	21.00	19.50
Mr Invoice	28.00	24.00
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I.O.Silver, Late Nite or PathFinder	14.00	12.00

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Appleworks 3.0 or GS upgrades, call.
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(callers by appointment, or at least, please phone first)

TELEPHONE & FACSIMILE N° 081-341 9023

AppleXtras

/XTRAS.P8.NO.8/

=HST.SHK	\$EO	91	5-MAR-91
=DEFNDRCLONE.SDK	\$EO	80	18-AUG-90
=DROPIT.SHK	\$EO	20	5-MAR-91
=ORBNASA.SHK	\$EO	49	5-MAR-91
=BASIC.EDITOR	DIR	1	5-MAR-91
=EDITOR.DOCS	TXT	11	10-FEB-91
=TEXT.EDITOR	BAS	14	10-FEB-91

/XTRAS.GS.NO.8/

=BOOT.SYSTEM	SYS	1	6-JAN-90
=TITLE	\$C1	65	5-MAR-91
=PRODOS	SYS	34	20-AUG-90
=UTILITIES	DIR	1	5-MAR-91
=ABOUT	DIR	1	5-MAR-91
=ABOUT.DOC	TXT	51	3-APR-90
=ABOUT	\$B3	48	3-APR-90
=ABOUT.ICON	\$CA	4	11-MAY-90
=SHRINKIT.GS	DIR	1	5-MAR-91
=GSHK	\$B3	212	19-JAN-91
=BUG.REPORTS	TXT	8	16-JUN-90
=SHRINKIT.ICON	\$CA	20	29-JUN-90
=GSHK.DOCS	TXT	59	13-JAN-91
=README	TXT	14	19-JAN-91
=VIRUS.RX	DIR	1	5-MAR-91
=RX.GS	\$B3	35	12-FEB-91
=RX.GS.DOC	TXT	33	12-FEB-91
=DEFANGED.VIRUS	SYS	3	10-FEB-91
=RX.GS.DATA	BIN	8	12-FEB-91
=MENUTIME	DIR	1	5-MAR-91
=MENUTIME	\$B8	13	11-DEC-91
=MENUTIME.DOCS	TXT	10	11-DEC-91
=MENUTIME.ICON	\$CA	3	11-DEC-91
=AWKS.FINDER	DIR	1	5-MAR-91
=AW.FINDER.LAUNCH	SYS	3	1-NOV-90
=LAUNCH.AWKS.DOC	AWP	7	1-NOV-90
=DESK.ACCESSORY	DIR	1	5-MAR-91
=NIFTY.BXY	BIN	254	21-FEB-91
=SUPER.BXY	BIN	150	1-MAR-91
=MIX.N.MATCH	DIR	1	5-MAR-91
=INSTRUCTIONS	TXT	5	18-DEC-90
=MIX.N.MATCH	\$B3	5	17-DEC-90
=INFO	DIR	1	5-MAR-91
=NTS504.BXY	BIN	41	6-JAN-91
=PROGRAMS	DIR	1	5-MAR-91
=AUDIOZAP	DIR	1	5-MAR-91
=AUDIOZAP	\$B3	52	16-FEB-91
=AUDIOZAP.DOCS	TXT	74	16-FEB-91
=AUDIOZAPDOX.AWP	AWP	79	16-FEB-91
=AZ.TITLE	\$C1	65	25-JAN-91
=CRIBBAGE	DIR	1	5-MAR-91
=CRIBBAGE	\$B3	172	22-FEB-91
=CRIBBAGE.ICON	\$CA	1	4-NOV-90
=ART.DECO.36	\$C8	28	25-JUN-88

□ Our regular mixed bag again this month. There are some updates to existing programs and many new items. We try to keep a good mix of programs on the Xtras disks.

We would like to hear from you to tell us whether you like what we are providing and what kind of applications you would like to see that we may not already be including.

Let me remind those members who are not currently part of the Xtras scheme that you can of course join anytime you like. If you wish you can order back issues at the same time.

Back issues of the Xtras disks may be purchased by any member three months after their original issue.

See the separate order form for current prices.

/XTRAS.P8.NO.8/

HST.SHK

An educational program that explains the Hubble Space telescope in depth. The files should all be copied to a blank floppy disk initialised with the name /HST.

DEFNDRCLONE.SDK

Unshrink with ShrinkIt 3.0.2 from Xtras.P8.No.5 to produce a self-booting 5.25 disk arcade game. You will need a joystick to defend yourself against the flying clones!

DROPIT.SHK

A Tetris like game for the Apple II using Lo-Res Graphics. Lo-Res graphics are easy to use and are a forgotten art by many programmers.

ORBNASA.SHK

Another educational program that explains how satellites orbit the earth. You can calculate your own orbits and paths and display the results.

BASIC.EDITOR

A simple text editor written in Basic. It can be used as an instructional tool that can be modified or it will edit small text files as it stands. Useful for creating Exec files.

/XTRAS.GS.NO.8/

Utilities Directory

ABOUT

A useful program from New Zealand that will display and print many kinds of text documents and launch programs.

SHRINKIT.GS

ShrinkIt GS V1.0.4. This is mainly a bug fix to 1.0.3

VIRUS.RX

Glen Bredon's excellent Virus protection tool. It maintains a snapshot of your system and will inform you if you are struck by a Virus or other disaster.

MENUTIME

An NDA that will display the time and date on the Menu Bar. It is fully configurable from its NDA.

AWKS.FINDER

In conjunction with UltraMacros this program will launch your AppleWorks and load your AppleWorks files directly from the Finder.

Desk Accessory Directory

NIFTY.BXY

Version 3.2 of Dave Lyons excellent utility. There are many minor changes and some new additions.

SUPER.BXY

Super Info version 2.1 tells you all you ever wanted to know about your IIs. Many changes and bug fixes made to this indispensable NDA.

MIX.N.MATCH

Mix.N.Match allows you to cut down ProSel to a manageable size when working from floppy disks. It allows you to discard any of the ProSel modules you do not need and so make space on your disk for your application..

Info Directory

NTS504.BXY

The complete text files from Apple explaining the differences between System 5.0.2, 5.0.3 and 5.0.4.

Programs Directory

AUDIOZAP

A comprehensive sound editor which not only processes sounds but it also allows you to create many sound effects. It will work with most current sound file formats and sound cards.

CRIBBAGE

For those card sharps amongst us. Practise your game against the IIs! If you do not know how to play cribbage, full instructions are included.



Disk Zaps and all that (part 4)

Make it Grow with Branches

Ewen Wannop continues his journey through the Operating Systems

Those of us who cut our teeth on DOS 3.3, first saw ProDOS as a confusion of pathnames. We never seemed to get the right one entered, and could never seem to get even a simple Catalog of a disc in another drive. Forever was the message 'PATHNAME NOT FOUND' being displayed. However, beneath the seeming difficulty of such normal commands, lies a powerful operating system. It leaves DOS 3.3 way behind with its speed, versatility and power.

The Evolution of ProDOS

To explain the evolution of ProDOS, first let me take you through a bit of history. When Steve Wozniak first wrote the routines for Apple DOS, there were only single density 5.25 inch drives around. With a maximum of 40 tracks on these drives, there was a practical limit to the amount of data on each disc, and so a limit to the possible number of sectors that could be accessed by DOS itself.

This served us well for a time, until we tried to hook on a hard disc drive. We could only format the hard disc as a number of volumes the size of a normal 5.25 inch disc, rather than formatting the drive as one large disc.

The reason that only such a small number of sectors was available to the DOS system, lay in the way that the Disc Map and VTOC was constructed. This meant that there was simply no room to expand this map beyond the 40 tracks.

DOS had some other limitations as well. The Catalog structure allowed only a few file types to be defined, and no other information could be stored apart from the filename.

It was because of such limitations, and also because Pascal discs had already allowed a more flexible approach to disc structure, that ProDOS came into being.

To be more accurate, SOS came into being first, and ProDOS followed. SOS is the operating system for Apple /// machines, and ProDOS is an extension of this system. In fact ProDOS can read SOS discs, and some ProDOS discs can be read by SOS. The main difference between the two is that SOS files have different file type values.

ProDOS allowed much more infor-

mation to be held about each file in its directory entry, and more importantly, its disc map allowed volumes of any size to be mapped. It was thus possible to build a single volume of any size on a hard disc, regardless how big the hard disc was.

The actual information at sector level on a ProDOS disc, is written in exactly the same way as any Apple disc, whether it be DOS, ProDOS, Pascal or even CPM. This means that our DISK MANAGER program will read any disc sector on any of these disc types. However, there the similarities end, and we find the individual structures of the different discs vary.

Disk Structures Explained

Held in the information embedded on each sector, is the track and sector number of that particular sector. As we read each sector spinning under the head of the disc drive, we must process and store the information gathered.

This takes some time, and when we are ready to take in the next sector, we will find that it has already passed underneath the head, and we must wait till it comes round again.

For this reason, DOS does not read the sectors in ascending order, but uses an interleaving technique to achieve the fastest sector by sector

read. It therefore does not use the actual sector numbers on the disc, but uses a lookup table to determine the actual sector to be read, from the target sector given.

SOS, ProDOS and Pascal discs use a different interleaving table than DOS, and CPM uses yet another. This means that ProDOS sectors are not compatible with DOS sector numbers.

Using Disk Manager under ProDOS

DISK MANAGER is written under DOS 3.3, so to access a particular sector on a ProDOS disc, you will have to determine the actual DOS sector required from Table 2.

Just to complicate things even further, SOS, ProDOS and Pascal discs, store information in Blocks of 512 bytes, rather than the 256 byte sector of DOS. So to read a given Block on a ProDOS disc, you will need to actually find the track required, and then read in two sectors in turn.

ProDOS discs start with Block 0 at Track 0 Sector 0, the Blocks then ascend numerically till the limit of the disc is reached.

Because each Block is 512 bytes long, you can only get 8 Blocks on a track. To find the actual track and sector of an individual Block, take the integer of the Block number divided by eight as the Track, and then taking the remainder refer to Table 2 for the Sectors. The two DOS sectors are the low and high parts of the block respectively. See Table 2.

The layout of a ProDOS disk

Having now explained how to use DISK MANAGER to look at ProDOS discs, I will give a brief rundown on the layout of these discs. This will

allow you to have a first look at your ProDOS discs, but I will need to leave till next time a more detailed look at the ProDOS Directory, as it can be quite complex and overwhelming at first sight, but this is of course its great strength and power.

I shall be referring to the ProDOS Block numbers, use the Tables to calculate the actual Track and Sectors

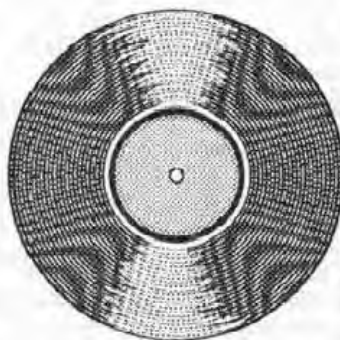
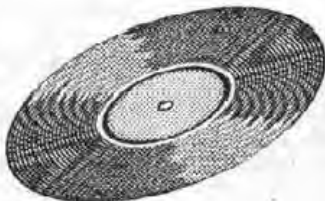


TABLE 1

Track = Integer(ProDOS Block/8)
The remainder is the ProDOS Block within that track.

TABLE 2

ProDOS Block:	\$0	\$1	\$2	\$3	\$4	\$5	\$6	\$7
Dos Sectors :	\$0,\$E	\$D,\$C	\$B,\$A	\$9,\$8	\$7,\$6	\$5,\$4	\$3,\$2	\$1,\$F

required. These are the usual Blocks that ProDOS uses. It is possible for them to be in a different place on the disc, but for the moment we will assume we have a normal ProDOS disc in our drive.

BLOCK 0 is the boot-strap loader for the file 'ProDOS'. If ProDOS itself is not present on the disc, then a message is given: "**** UNABLE TO LOAD PRODOS ****".

BLOCK 1 is a boot-strap loader for SOS. If the disc is booted on an Apple ///, then a search is made for 'SOS.KERNEL'. If found this is loaded instead of ProDOS. This Block may not be present on all ProDOS discs.

BLOCK 2 is the start of the Directory. The Directory normally takes up four blocks, Blocks 2 - 5, but can be of any size.

BLOCK 6 is the Disc Map. For a 5.25 inch disc, there will only be this Block allocated for the Disc Map. For larger Volumes it can be of any length.

BLOCK 7 is the first Data Block of the first file on a normal ProDOS disc.

BLOCK 279 is the last Data block on Track \$22 of a 5.25 inch disc.

Each file is constructed in exactly the same way. Unlike DOS, only the directory entry is changed to denote different filetypes. There is an Index Block associated with each file longer than one Block, this is analogous to the Track Sector list of DOS. The Directory entry holds considerable information on the file, with entries such as filetype, access rights, date and time of creation etc.

The Directory itself can include entries to further directories, these are stored in the same manner as file entries. It is thus possible to nest sub-directories to any depth. It is this possibility that of course is the power of ProDOS, and hence gives us the need to use Pathnames. Discs are referred to by Volume Name, not by Slot and Drive, and sub-directories are then referred to by their Directory Name. A Pathname thus actually tells us the route that ProDOS must take down the tree-like branches of the Directories to find an individual file.

Coming in Part 5

I think that this is a suitable point to leave you this time. Next episode will cover the actual construction of the ProDOS Directory. This will give you the clues necessary to change filetypes, to enter times and dates and to unlock and lock files. I will also give you an introduction to the MLI. This is not a Mysterious Language Insight, but the very powerful tool of the Machine Language Interpreter lurking within ProDOS.

Ewen Wannop

AppleWorks Macros

Peter Davis shows how not to lose track of pathnames in AppleWorks

AppleWorks 3.0 offers options to save changed files to their current directory or their original directory. The problem is that when you select the "original" option you are left in the last directory used, and this can be a bother when you come to find your way back to the current working directory.

This macro identifies your current drive or directory, saves each file to its original directory then recalls your drive or directory.

```
Variables $9 various : Disk : You : ""
$7 Disk ?
$6 Disk £ (Slot £)
$5 /PATH/
$0
q
```

subroutines also use R, C, x, z.

Here is how it works. Peek the current file no. Use the Main Menu screen to check if the current device is accessed as a "Disk" or a Path. If disk then use \$6 to hold the "Disk # /PATH/. Choose "3 Save Desktop files.....": message: call subroutine to control Arrows: start begin repeat loop to search for "You" on the screen until all files selected have been saved, after which "You" ceases. (Sense "You"; "made changes....."; "made NO changes....."; "created..."). Punch back the Slot and Drive or Path as appropriate. Return to the file no. if any. Note if a device is accessed as Slot and Drive then use the Token disk toggles the drive to determine the Path.

Peter Davis

Start

```
<ctrl-S>:<all><Q = peek 3156 : oa-Q esc $9 = screen 1, 1, 21 :
$7 = left $9, 4 : $6 = right $9, 15 : ifnot $7 = "Disk" then disk :
wait 50 : $5 = $0 " endif :
>3<rtm
msg ' Select -> Files to Save to original directory and RETURN ' :
sa-ctrl-A : rtn
begin : sa-ctrl-R : if $9 = "You" then>3<rtm rtn $9 = " " : rpt : else :
ifnot $9 = "You" then endif :
if $7 = "Disk" then ba-ctrl-D : else :
ifnot $7 = "Disk" then ba-P : endif : oa-q : print q : esc>!

<ctrl-A>:<asr
begin
x = key :
if x = 27 then msg ' Macro Aborted ! ' : wait 1000 : msg "" : exit: else
if x = 13 then endmacro else
print chr$ x :
rpt
stop>!

<ba-ctrl-D>:<asr><oa-Q esc>5<rtm>1<rtm wait 20 : $0 = $6 : sa-ctrl-Z :
if z = 0 then bell : msg ' ' + $0 + ' not found ' : stop : endif :
rtn esc>!

<ba-P>:<asr><& "path" : & $5>!

<ctrl-R>:<asr><R = 139 : C = 15 : $9 = screen C, R, 3>!

<ctrl-Z>:<asr><Z = 0 : find>!
```

Apple Peter Davis

Comms Without Tears

Ewen Wannop gives us a first guide to comms and its mysteries - a reprint of an article first published in Apple2000

Well, you've unpacked the little black box, struggled with the cables, hooked it all up, booted your terminal programme, dialled the number and then nothing, not even a bleep from your trusty Applemac.

Take a large slug of Apple juice, sit down and contemplate the problem properly. It is only then you notice that slogan you hung in your Appleroom one day many moons ago 'If all else fails, read the MANUAL'.

Well and you thought communications was going to be easy, you have to be able to read as well! Still you pick up the manual, and look at the index.

'How to setup your System', Chap 1, it says. Looks like you may get somewhere here

'First plug in the Serial card'. Serial card, you did remember to get one didn't you? Or are you lucky and have a //c, or horror of horrors forgive me for mentioning it, a MAC.

'Next check that your modem/serial card cable is correctly wired'. This can be a nightmare, there are female plugs, male plugs, 25 way D plugs, 5 pin domino plugs, DCE ends, DTE ends and goodness knows what else. Get help if you are in trouble here, it is the most common cause of modem problems. Once you have the right connection, you can forget about it from then on.

'Plug your modem into the BT socket'. Hang on, is that a red sticker there, what does it say ... 'Sorry, you have

bought an unapproved modem, connecting this apparatus to any BT phone system will land you in deep trouble and a big fine' ... Oh dear, but just a minute, it wasn't red at all, it is a green one and says ... 'Well done, you bought an approved modem, go ahead and plug it in'. You did remember to get sockets fitted by Telecom, didn't you? You sent back your old phone to save its rental, and now you have a brand spanking new memory phone with nice buttons, to do all your dialling for you. In the modem lead goes to the wall socket, and there on the back of the modem is a nice convenient socket to park the phone in, so you don't have to unplug to use it normally.

'Boot your disc and dial the service you require', OH dear it still does not work, what have you done wrong this time. Back to Chap 1 ...

'Configure the disc for your system' ... Ah well I suppose it does need to know which slot everything is in, and it would be an idea to tell it what baud rate you are going to use, and it seems reasonable to tell it what bit format the other end wants. 8N1 gets you by in most situations.

Off we go again, that Bulletin Board in Timbuktu is said to be a good one, lets dial it up. Engaged! How dare it. Still I suppose other people use it as well, but we have auto-redial on our phone, so try again. Typically up to half an hour later, and three more Apple

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juices, we get the ringing tone. Give it about four rings, if it doesn't answer in that time, then it is not a normal computer service, hang up and spare the person at the other end please. But it answers, a tone whistles at you, what to do we do now. Ah well having started on Chap 1, you were wise and read on, found out what you should do next, so you are prepared. You switch on your modem and put it into Originate mode. The carrier light comes on, and suddenly you hear a flight of starlings coming down the phone at you. Don't panic, it is the bulletin board sending you its header page, put the phone down so you keep the line clean from your nervous coughing, the modem will hang on to the line for you.

Ah we have something now on the screen ...

Well I hope it was like that, if not, you may have had the modem set to Bell tones, or you may have been ringing the States, and were still on CCITT tones. The other end may have been on Originate tones, which means you should be on Answer tones, there are two complementary sets of tones, and you must be on the other set to the computer you are calling. You must have the same baud rate as the other end, or the complementary in the case of 1200/75. In that case you must be on 75/1200 if he is on 1200/75.

You got all that right, and you see a message on the screen.

'FIRST NAME:', what do we do here, put it in I suppose. If you must hide your proper identity, please respect the system and use a sensible pseudonym. Remember BT can do nasty things to you if you use obscene words on the phone line, it is an offence to send any, even by computer!

In goes your name, but a hint here, if this is not your first time on the system, you can usually enter your name by spacing first and last with a semicolon. Like this ... JOE:BLOGGS<CR>

'LAST NAME:' will come next. If you have been there before, it will now say where it thinks you are from, and if that is correct,

'FROM LONDON ?' Just answer 'Y' here, no <CR>. But this is your first time, so you will need to put in where it is you live, no semicolons here, but you can usually put in more than one word, so 'LONDON ENGLAND' sounds good. Again, if you have been here before, you will now see 'PASSWORD:', but if this is your first time, it will then ask you for your phone number, and a password that you will use next time you log on.

The menus from now on, vary from one board to another, but if in doubt usually pressing <CR> will bring you up a more detailed description of the menu. You may want to find the 'Utility' area first, and set the system up for your computer. Most bulletin boards will assume, at first, that you do not have lower case, and can only display

40 columns. If you are new to the system, you may find that you can only get access to a limited area within the board, but as you prove yourself, the SYSOP will open up more areas for you. The bulletin board is an interactive thing, please contribute to it, don't just log on and read messages, put some in yourself, help it work. There must be something you can say, or some problem you want answered or someone you would like to contact. If you are adventurous, you often find phone numbers of other bulletin boards, some are on the continent and they even go as far as Australia. Though I suggest a large glass of the amber nectar before you contemplate how much that might cost in phone bills! When you log off the system, do say Goodbye properly, the system will feel happier if you do, and it will reset more quickly for the next caller. If it is your first time on, leave a message for the SYSOP (the SYStem OPERator) telling him something about yourself and your machine, it all helps the system be more useful to you, and for him to put you onto new parts of the system.

Well now that was successful, now for something completely different. You have been given the phone number of your local PRESTEL computer. Setting yourself up for 1200/75, you boot your PRESTEL emulation program (You will not get any sort of meaningful display unless you have such a program), and dial the number. Ah we have the tone, and when you switch on your modem, you get the characteristic low tone from your end. The carrier light comes on, down with the phone, and the screen comes to life. But what is this, 'CUSTOMER IDENTITY PLEASE'. Oh dear, you forgot to join PRESTEL didn't you, still never mind, all is not lost. Enter '4444444444', this is the identity for non-members, it then asks for your 'PASSWORD:', well we shall try '4444', it works, and we are greeted by the demonstration database. Of course if you had joined PRESTEL or one of the CUG's, then we would be into PRESTEL properly. If you get your identity/password wrong, it will let you try to put it in three times, and then hang you up. The system is pretty easy to use, as most pages have menus that simply need a one or two key press to precede, but Prestel however is funny, and asks for page numbers the rest of the time if you want to jump about. To enter one, you must first enter a '*', then the page number and then finish with a key you would not expect to have to press. It will also ask you at other times to press this key. It calls it '#', but it is not really a hash as we know it, and so Prestel emulation programmes will change one of its keys to a Prestel '#' to make life easier for you. Vicom for instance uses the normal '#' key, but Data Highway, assuming this is a key you are going to use often, and as it is really Prestel's 'ENTER' key, reconfigures the <CR>

key to '#'.

Well that was enough of that, lets hang up. No don't just hang up the phone, sign off properly with *90#, you don't want to be left paying any charges after you have rung off do you?

We seem to be getting quite bold now, so lets try The FORCE, or as lesser users know it, BT GOLD. We have been learning fast, and have subscribed to it already. The SYSOP has sent us our manual and Welcome pack, and off we go. We need the normal terminal programme for this, so in it goes. We are getting good at this, and have remembered to change the modem to the baud rate we want. First time this should be 300 baud, till you get used to the system. We dial up the GOLD directly, or PSS if we live outside London. PSS is a funny thing at times, and downright unfriendly at first sight. Nothing appears on the screen, we have a carrier, the light on the modem says so, but nothing. Back to the manual. Ah we have to 'wake' it up. So we type <CR><CR>D1<CR>, if this does not work immediately, try again and again. At last it comes back with a message. Bit of gobbledegook that, but never mind must mean the port we have entered, but it says NUI?. That means you must now enter your PSS Identity. You seem to remember it was 'NTLGOLD123XYZ' or something like that, it is all in your welcome pack so you copy it on to the screen. What now, it says NUA? what on earth is that, if the NUI? was the identity, this must be the address of GOLD, so you type in A2190987654321 (I must learn it off by heart sometime). Success, we have the title page of BT GOLD, but it is now asking for your personal password. What was it again, ah yes, BSG001. In it goes (Ed. Phew... at least that one is not secret). Now it wants still more, never ending this it seems, so in goes your personal password, and you had remembered not to use your first name, your wife's first name, your birthdate, the name of your cat etc. Don't give a hacker an even break!

At last, your there, what a performance that was. Joe Clever Cloggs, got there ahead of you though, he used a 'MACRO'. A MACRO, what is that? Then you remember that manual, it told you all about it in chapter 5. All he did was load the macro, press one key and all that question/answer performance automatically happened before his very eyes. Looks easy, and even if it did take time to understand how the macros are constructed, was worth it, as they only need to be prepared the once. If a macro 'sticks' on PSS at the start however, entering <CR><CR>D1<CR> from the keyboard, usually starts it off again.

The FORCE tells us there is a message 'Unread' waiting for us, so remembering from our FORCE manual that MAIL READ UNREAD<CR> will bring it up. We try, and there we are, a welcome message from the SYSOP. We

One final thing I should mention, PRESTEL has a lot of information on holidays and travel. It might be advis-

Hope to see you on one of the systems, I can be found on the FORCE, PRESTEL and TABBS. Nearly all the committee is on the TABBS ... we do a lot of the committee work there now, the phone is cheaper than petrol ...

This article was written some time ago. Things have changed a great deal since then. Apple2000 no longer has the Force, though the notes that refer to it now equally apply to Telecom Gold. For the last year we have had CompuServe added to the list of excellent systems we might call with our modems.

Write to the Letters page if you need more help to get you started through the jungle of comms.

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Orca/C

Dave Ferris reviews the Compiler and its Development Environment

Introduction

Twenty-odd years ago I wrote my first program in Fortran IV. Since then I have used Algol, Cobol, Basic, Pascal but, almost exclusively, assembler.

When Unix asserted itself, I decided it was high time I learnt how to program in C. To this end I bought the obligatory copy of Kernighan & Ritchie and invested in Apprentice C, supplied by MGA. This is a subset of the Aztec C compiler that ran under DOS3.3 on my old Apple II. It produced very slow P-code, but it worked very well and introduced me to a Unix like Shell environment on the Apple for the first time.

I have already used Orca/M and Pascal on a //GS. Orca/M was produced by ByteWorks for Apple, who distributed it as the Apple //GS Programmers Workshop (APW). It is a complete development environment, providing a Unix-like text-based shell with scripts, environment variables and supporting utilities like the excellent editor, with which I'm writing this.

Now ByteWorks has produced Orca/C, a fully ANSI standard C compiler, that runs under the text shell or under Prism, their new Desktop Programming Environment. The latter was developed some time ago and sold as an separate product, but is now included as standard with Orca/C.

The Package

It comes in a box with 3 x 3.5" discs and a 372 page manual, and requires an Apple //GS with at least 1 Mbyte of memory and 1 x 3.5" drive. ByteWorks recommend 1.25 MBytes + 1 x 3.5" drive + one other drive (any type), or for preference a hard disk drive.

I have 1.25 MBytes with 1 x 3.5" drive, normally I use a large Ram Disk, but I had to reduce it to 192K for best results.

Disk 1 is the Boot.Disk, this starts the Orca system and then initially loads the Desktop Development Environment. It then asks for Disk 2 (ORCA.C) to be put online. This contains the Compiler, Linker, Libraries and Utilities needed for normal operation. Disk 3 contains samples, including some benchmarks and text and graphic demonstrations. It also

contains the Editor and other files required if you choose to use the text-only development environment.

The C Compiler

This is basically an ANSI standard C Compiler, which makes use of some of the ANSI extensions, plus some Orca/C unique extensions to enable Apple//GS programmers to make the most of their machine:-

- **Pragmas** - the ANSI standard supports these preprocessor commands that are passed to the Orca/C compiler to control the way in which the program is compiled and/or linked. They are:-

#pragma cda name start shutdown - create a classic desk accessory.

#pragma databank parm - used to tell the compiler that it needs to set the databank register for function called by tools.

#pragma debug parm - used to set or clear debugging flags.

#pragma float card slot - if FPE floating point card installed.

#pragma keep name - define output file name.

#pragma memorymodel parm - small(0) or large(1) - see fig-2

#pragma nda open close action init period eventmask menuLine - create a new desk accessory.

#pragma optimize parm - set the level of optimization.

#pragma stacksize parm - set size of stack (8K bytes by default).

#pragma toolparms parm - used around a function that is to be called from a different calling conventions.

- **asm, inline** - keywords allow the inclusion of 65816 native code in a function (asm) or an interface to Apple//GS tools. Inline(a,b), which is Orca/C specific, causes the X-register to be loaded with a and a JSL b executed, where a is the tool number and b is the main toolbox entry point at 0xE10000. The second value may be changed for user tools.

- **pascal** - this is an Orca/C keyword, used in a function declaration, which tells the compiler that the function was written in Pascal. In this case the order of parameter passing needs to be changed. In fact, all of the original Pascal toolbox interfaces, such as the QuickDraw calls are available in the ORCALIB library for use by C programs, and the function is defined as pascal in the appropriate .h file.

- **segment statement** - this allows a program to be split into two or more load segments, see fig-2. Functions declared after the segment state-

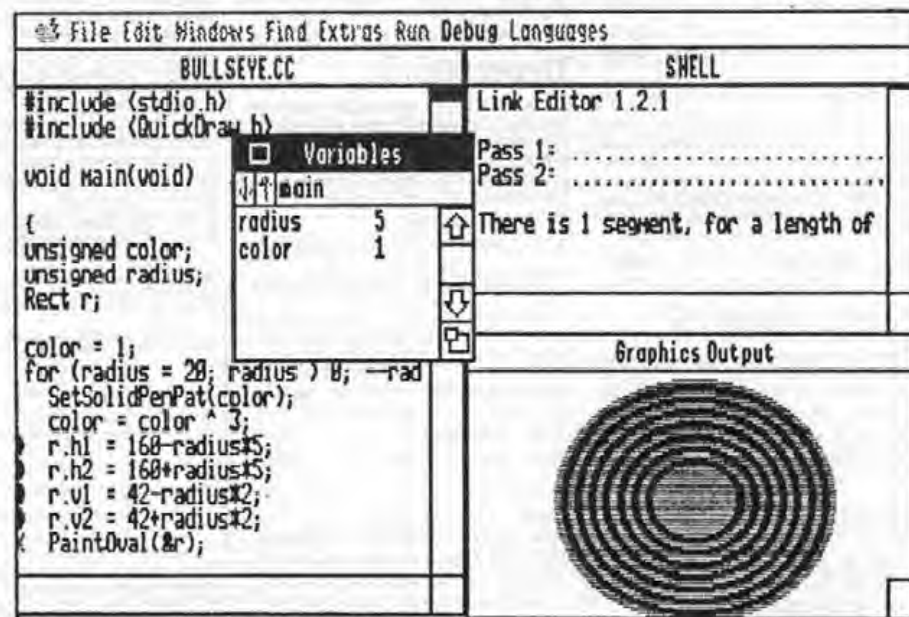


Figure 1

ment appear in the new load segment. There are advantages and disadvantages to using this, small segments are more likely to load when memory is tight, but for large numbers of segments the extra relocation records will slow loading down.

Libraries

SYSLIB contains a powerful set of library functions. Most of these are standard functions provided with any good C compiler, for file handling, I/O, string operations, conversions etc. A few are unique to Orca/C, and have been added to make it easier to deal with the Apple //GS toolbox, such as startgraph(320) - which starts up QuickDraw II in 320 mode, without having to do all the normal setup yourself.

In addition to this there is ORCALIB which is used in conjunction with the .h files in ORCADEFs to give access to the toolbox routines.

Note: According to the release notes a new version ORCAGLIB is required for linking when the large memory model is used.

The Linker Linker 1.1 as supplied with Orca/M and Orca/Pascal has now been replaced by the new improved version 1.2 (Zaplink). It is faster than the old version, and can work with less memory, a good feature when running under GS/OS 5.0.2.

In addition the new linker can take advantage of the new features of Object Module Format 2.0 and expressload. Output is compacted and expressed by default, to take up less room on disk and load faster. Flags can be used to turn these features off if required.

Development Environment

I have become used to the text based shell under Orca/M and Pascal, it is very like Unix and, with the use of a few aliases defined in my login file, becomes even more so. (One thing I missed though, was a way to get input into a shell-script from the keyboard, as is possible with Unix shells.) I have also used desktop editors and debuggers on Sun Workstations, and looked forward to using similar tools on the Apple //GS.

The desktop environment provides a large number of features:-

- ☐ Editor - invoked when opening a source or shell file in a window, is similar to the text-based version, but with mouse controlled cursor movement. It has a split-screen facility, which is very useful for looking at separate parts of a large file.
- ☐ The Shell window - which is opened automatically when you compile / link source from a selected window, unless you have already opened one of your own. It accepts all the commands that the text-based system

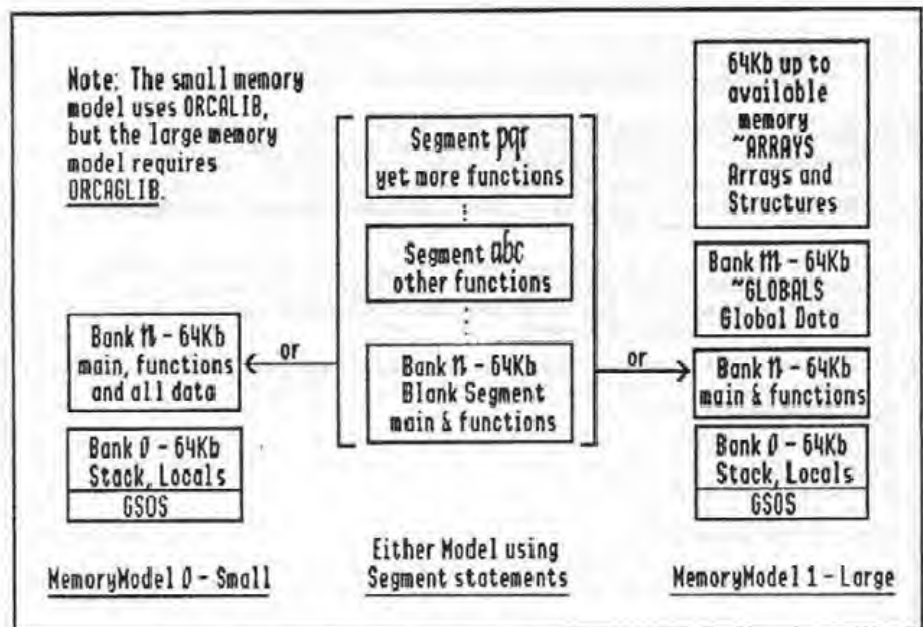


Figure 2

does, though it lacks the command completion facility and history mechanism.

- ☐ Graphics Output window - opened from a menu bar selection, is available for use by simple graphics programs, without the need for complex initialization of viewports or opening a new desktop.
- ☐ The Source Debugger - this is the biggest plus of the whole desktop environment, or at least it would be, if it worked as advertised. With the review copy on my home system, setting breakpoints and selecting auto-golines (which run at full speed even in step mode) did not work. All the other feature, Step, Trace, etc. appeared to work though, and the debugger is an invaluable tool for

examining (small) programs.

It can provide profiling information, detailing which functions are called and how much time is spent in each.

Variables may be displayed, see fig-1. This can be useful, though only scalars (single variables) may be shown. Arrays must be displayed element by element, and structures or unions are inaccessible. Variables can only be entered once the program is active, and only for globals or the current function's local variables.

The debugger allows you to view the stack and dump/alter memory. It also has a Native Code debugger to show Program Counter, Processor Status, Registers and disassembled code. The register contents may be changed and the address from which

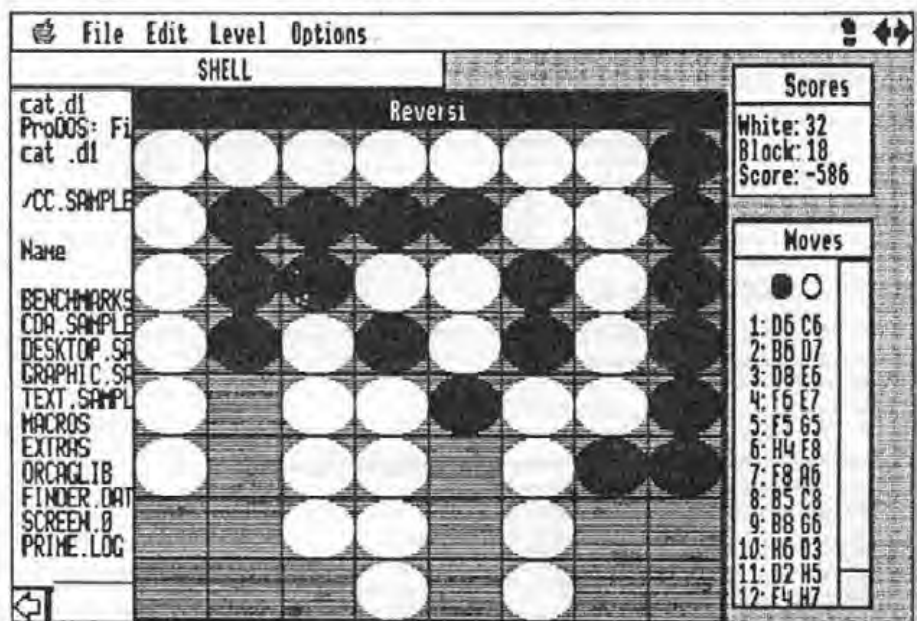


Figure 3


```
#pragma keep "prime"
#pragma optimize -l
/*****
 *
 * This is probably the most famous benchmark in use today.
 * It tests the speed that a compiler can do logic and looping
 * operations. While there are things that you can do to make
 * this benchmark run faster under ORCA/Pascal, we have not
 * doctored it in any way - this is the original benchmark
 * in its original form.
 *
 * To get the best performance from the desktop development
 * environment, be sure and turn debugging off from the
 * Compile Dialog. Use the Compile command from the Run menu
 * to get the compile dialog.
 *
 *****/

#include <stdio.h>

#define true 1
#define false 0
#define size 8190

char flags[size+1];

main()
{
    int i, prime, k, count, iter;

    printf("10 iterations\n");
    for (iter = 1; iter <= 10; iter++) {
        count = 0;
        for (i = 0; i <= size; i++)
            flags[i] = true;
        for (i = 0; i <= size; i++) {
            if (flags[i]) {
                prime = i+1+3;
                /*printf("%d", prime);*/
                for (k = i+prime; k <= size; k += prime)
                    flags[k] = false;
                count++;
            }
        }
        /*printf("\n");*/
        printf("%d primes....\n", count);
    }
}
```

Figure 4

```
show time ; cpl prime.cc ; show time
Time: 20 Jan 1991 15:14:51
Link Editor 1.2.1

Pass 1: .....
Pass 2: .....

There is 1 segment, for a length of $00002CAA bytes.

Time: 20 Jan 1991 15:15:14

show time ; prime ; show time
Time: 20 Jan 1991 15:15:42
10 iterations
3 5 7 11 13 17 19 23 29 ...
3 5 7 11 13 17 19 23 29 ...
3 5 7 11 13 17 19 23 29 ...
3 5 7 11 13 17 19 23 29 ...
3 5 7 11 13 17 19 23 29 ...
3 5 7 11 13 17 19 23 29 ...
3 5 7 11 13 17 19 23 29 ...
3 5 7 11 13 17 19 23 29 ...
1879 primes....

Time: 20 Jan 1991 15:56:36

show time ; cpl prime.cc ; show time
Time: 20 Jan 1991 16:03:19
Link Editor 1.2.1

Pass 1: .....
Pass 2: .....

There is 1 segment, for a length of $00002CAA bytes.

Time: 20 Jan 1991 16:03:45

show time ; prime ; show time
Time: 20 Jan 1991 16:04:00
10 iterations
1879 primes....

Time: 20 Jan 1991 16:04:13
```

Figure 5

code is dumped may also be varied. I tried using both this facility, with a C program, and displaying variables at the same time and succeeded in hanging the machine. Several combinations of facilities seemed to have this effect.

- The Desktop environment also supports other desktop programs being executed from it. This results in a menu bar with a footprint and two arrows (see fig-3), which allow you to switch between desktops (like MultiFinder on a Mac). I'm not sure what the footprint icon is for, I think it freezes execution while selected, but holding the mouse button down anywhere on the menu bar is supposed to do this anyway.

Benchmarks

The CC.Samples disk comes with many examples, including some benchmarks. Fig-4 shows one of these, while fig-5 shows the results of running it under the desktop environment. The compilation and linking times are for a source file on the Ram Disk, but with the Compiler, Linker and Libraries on the 3.5" disk. I also ran this benchmark under the text-only development environment and on a Sun Workstation (text and desktop). The results, in seconds, are interesting:-

	Compile & Link	Execute with printf	Execute without printf
//GS DT	25	2400	13
//GS text	21	170	11
Sun Text	14	709	1.3
on workstation			
Sun DT	14	140	1.3
Sun Text	12	140	1.2
on terminal			

The Compile and Link times compare favourably with the Sun (a 680x0 based m/c), as do the execution times, under the text-based environment, when printing the results. The two big surprises were the //GS desktop environment when printing and the Sun. The latter is not so surprising when you remember that text on the workstation is all done graphically, and when you run the thing as a terminal it has to draw on a very big screen! But, 40 minutes under the //GS desktop is astonishing, especially since most of the results were outside of the window and required no drawing activity!

Documentation

The manual is extensive, 372 pages, with detailed explanations of how to use the Development Environments, Compiler and Linker, though it won't tell you how to write C programs, there is a list of reference works, including the ubiquitous Kernighan & Ritchie (you need the 2nd edition for ANSI standard). In addition to this there is a

very good on-line help facility, which makes using the shell much easier.

Conclusions

I have to admit a preference for the text environment for normal working, especially given the apparent fragility of the desktop environment. However, the debugger isn't available then, and it does have its uses.

The compiler is a good implementation of the ANSI standard and is fast and efficient. It should be noted that some of the Orca/C specific extensions (e.g. inline, pascal) will make source non-portable, but then asm has been supported all along and that



makes source completely non-portable. True portability can be a rare commodity.

The manual still talks about running Orca/C under GS/OS 4.0, "unless the release notes say otherwise". The release notes don't, but trying to install the compiler on a 4.0 disk with the old linker was a disaster, the compiler itself appears to have been expressed and will only load under GS/OS 5.0.2 (or higher?). I suspect that it is this change of OS that may be behind the problems I encountered with the desktop environment. I trust that ByteWorks can get these sorted out quickly, as I have great respect for their previous offerings. Then again perhaps GSOS 5.0.3 might cure some of them, but a hard disk would almost certainly be needed.

Dave Ferris

info

Product : Orca/C Compiler

Publisher : ByteWorks Inc.

Available from :

MGA SoftCat

41 Cinque Port Street


Rye


East Sussex TN31 7AD

0797-226601

Price : £129.95 WYSIWYP

Value : 

Performance : 

Documentation : 

SoftCat Corner

//e COLOUR MONITOR

If you've always wanted colour for your games or educational software, we've happened onto some interesting 16" Decca units which will plug directly into a UK //e without any kind of card. They cost just £159.95 and are a snip compared to our normal Philips CM-8833 at £287.49, (plus its 2" bigger). If you want to use the same unit as a TV as well, we have an add-on box which takes the price up to £199.95* - still well below our normal offering which can't be used as a TV! Hurry though, as stocks are limited.

ECHELON

Mentioned in Apple Slices Jul'90, Access Software's "Echelon" space flight

simulator was not available when potential users contacted MGA. We are pleased to advise that we can now supply the product while supplies last for just £19.95.

TML NOW ONLY DIG TUNNELS

If you've tried contacting TML recently you'll have found that they now trade as Lennard Devt. Inc. TML Pascal/Basic are no longer handled by them. Apparently another outfit called Complete Technology now do these products as "Complete Pascal" & "Complete Basic". I have been unable to connect with them by phone, but have written and hope to have a reply from them by the time you read this...

Jon Gurr - MGA SoftCat

MAC CONNECTIVITY

Psion Organiser Cable £14.95

Ready-made 1.5m cable to connect your Organiser to a Mac or IIGS 8-pin serial port.

AppleTalk NetWork Cable Kit £119.95

DIY set comprising 26 3-pin solder plugs together with 100m cabling.

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1.44Mb external daisychainable 3.5" drive for Mac.

Apple SuperDrive £258.75

As above, but Apple Computer badged.

NEW SOFTWARE

Copy II Plus v9.1 £34.95

Latest version of this best-selling utilities package now has a new lower price! Part-exchange upgrades will cost £19.95 + p&p.

AIRCRAFT PICS K-7 £4.00*

Crude hi-res pics depicting four different aircraft per screen.

MultiColour Grafix GS-207 £4.50*

As above but over 100 pics of nature scenes, animals, plants, and related topics.

DOS 3.3 System Master for 64K II+//ccGS £4.00*

Not really new, but just jolly handy. Instead of having to wait for Integer Basic to load every time you boot the DOS master, this version gives you the option of loading or not loading it, saving that annoying wait. I mean, let's face it; when was the last time you actually ran an integer program?

NEW KIT

ADDA+ £199.00*

High speed data acquisition system on a card for II+, //e or IIGS. A new 4-layer design offers 16 channels of high speed analog to digital conversion (7ms), 1 channel digital to analog conversion and 2 parallel ports with handshake. Includes elaborate interval and running timers for system speed-independent sampling rates.

MicroPort-32 £65.00*

32 channel digital I/O card with software selectable interrupts & I/O handshake lines, standard dual in-line connectors mate with commonly available IDC plugs. Includes excellent documentation.

OuterSlot £39.00*

Puts a slot outside your Apple where it is convenient to troubleshoot, test, & experiment with plug-in cards. Cable length is 20 inches. (Warning: not compatible with high-speed cards or memory cards).

Extend-50 £39.00*

For designing & experimenting with circuits. This is a cable which connects any standard Apple II slot to a breadboard. Used in schools or laboratories, the Extend-50 is a remarkable low-cost solution for multistation school labs and hobbyists alike.

SUPER APPLEWORKS EXPANDER 252 £99.95*

Our best value AppleWorks 256K //e memory expansion card. Doubles as an 80-column card, and is provided with PlusWorks software to give a 252K desktop. Knock £10 off if you already own PlusWorks-XM with Legend-E support, and be sure to ask for the card without software. If 252K is not enough, you can rope in an extra 128K using a Saturn compatible 128K RAMcard in any peripheral slot for a staggering 380K!!! May be upgraded to provide an RGB output for colour monitors, (add £49.95).

SUPER APPLEWORKS EXPANDER 380 £169.95*

As above, but including the extra 128K RAMcard for an AppleWorks desktop of 380K.

AE SuperDrive £239.95*

External 1.44Mb daisychain drive for Mac and functions as 1.6Mb unit on IIGS!!! Existing AE 800K drives may be upgraded for £99.95*

DataLink 2400 SendFax £249.95*

Brilliant! At last - a fax card for the Apple IIGS! Not just a fax card, but the most full-featured V21/V22/V22bis Hayes-compatible autodial modem card including ReadyLink comms software. Unbeatable value... Comes with USA connectors & is NOT BT approved.

RAMworks ColorLink £119.00*

The cheapest RGB colour monitor for the Apple //e is now Apple's own unit at just £126.50. With the IIGS you just plug it into the GS's RGB colour monitor port. However, for the //e there was normally no way of using this (now) cheap monitor. ColorLink connects to most //e RAM-works cards (including clones) to provide both Apple analog RGB and IBM-PC RGB/CGA outputs. So now you can get a high-quality RGB colour monitor for your //e, together with extended memory card & RGB adaptor (RAMworks I w/ColorLink) for just £362.50, (which compares directly to last year's best combo of Philips CM-8833 w/DMS RGB card @ £377.76). Not only is it now cheaper to use Apple's monitor, but you get the most supported extended memory card at no additional cost!

Mini 8-pin Extension Cable £7.95

2m m/f cable to extend printer cables etc...

MGA SoftCat

Tel: 0797-226601 [fax:226721]

prices include VAT

* prices include p&p

& where two prices

shown, the lower price

is for Apple 2000 series

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GeoCalc with GeoChart

David Morgan reviews a graphically-oriented spreadsheet and chart generator

What You Get

The package consists of two programs, GEOS, a graphics-based desktop environment, and a spreadsheet plus chart generator whose operation is controlled by GEOS. Together they occupy most of four double-sided 5 $\frac{1}{4}$ " disks (it is also available on 3 $\frac{1}{2}$ " disks, but you have to send for these using the registration card after you have bought the 5 $\frac{1}{4}$ " version).

There are two manuals, one for the GEOS environment (193 pages), and the other for the spreadsheet and graphing functions (174 pages). There is also an 'Interrupt Manager' card for those who do not have a mouse. Side 1 of disk 1 is the boot disk, side 2 is given over to demonstrations of other GEOS-based products (GeoPaint, GeoWrite, GeoSpell, GeoMerge, TextGrabber (this will import text from Appleworks, Multiscribe, Wordperfect etc., into GEOS) and GraphicGrabber (imports clipart from Print Shop, Print Master, Dazzle Draw etc)).

Disk 2 contains various drivers (11 RAMdisk, 7 clock, 49 printer, and 37 interface), and system files. Side 1 of disk 3 is GeoCalc, with sample worksheets on side 2. GeoChart is on disk 4, with fonts and desk accessories on side 2 (11 fonts, some of which are available in up to 6 point sizes).

Getting Started

I tried out this package on an enhanced Apple IIe with a 512k PlusRam in slot 4, a Titan accelerator card in slot 5, and, of course, the disk controller card in slot 6. The printer was an Epson FX-80, driven by a Cirtech Champion printer card in slot 1. As I do not have a mouse, the first thing I had to do was to install the Interrupt Manager card. This card must go in slot 7.

I then made several unsuccessful attempts to boot GEOS before discovering that it was not compatible with the accelerator card. After I disabled the card (using the Titan-supplied software), the program would boot. Registering the program (i.e. entering the name of the owner) is part of the initial boot procedure and must be done using the original disks and

not copies (none of the disks are copy-protected). The registered name is then written to disks 3 and 4 and becomes part of the opening display when these programs are run.

Details of input device (keyboard in my case, but mouse or joystick can also be used), printer, printer interface card, hardware clock (if any), memory expansion device (if any), are entered next, and then the appropriate drivers must be loaded. These are then written to the boot disk. It required quite a bit of disk shuffling and trial-and-error to sort all this out as the supported devices are exclusively American. Eventually I found that the 'generic 8-bit parallel' printer driver would work but nothing appeared to recognise the PlusRam. However, when I examined the contents of the PlusRam I found that the desktop had quietly loaded itself in and occupied 510K without telling anyone!

The next job was to make work disks the spreadsheet and chartmaker, configured for my particular setup. Only after all this can you really start to use the program.

What it does

The GEOS suite of programs attempts to provide a 'windows'-like operating environment for the Apple II series. It does this by running entirely in graphics mode and presents the user with an opening window which has a horizontal main menu bar from which a series of drop-down menus can be obtained. There are also icons for disk drives, expanded memory, applications, printer etc.

Menus are opened and icons activated by moving a pointer around the screen and 'clicking' on the required item. This can be done from the keyboard using a combination of open-apple key (OA) and arrow keys. Fine movement of the pointer requires the use of OA and one of the group of keys centered around 'K'. 'Clicking' is done using OA+K. Other combinations of keys can be used to move the pointer including OA+number or OA+shift+arrow. The main purpose of the desktop is to provide a file and disk-handling interface and a shell from which to run applications but it

also includes a number of accessories - notepad, alarm clock, calculator, photo manager (inserts graphics images into other GEOS applications), text manager (this does the same for text) and a puzzle.

The spreadsheet, GeoCalc, is 256 rows by 112 columns and contains the usual list of functions including some that the manual lists as statistical (AVG, MAX, MIN, SUM), this they clearly are not although they can be used to derive statistical functions. In data entry Return moves down to the next cell and Tab moves one column to the right. Like the desktop, the spreadsheet is in graphics mode, hence scrolling using the arrow keys is very slow as the screen has to be redrawn after each key-press.

According to the manual Appleworks spreadsheets can be imported into GeoCalc. I spent some time trying to do this with a 40 column x 80 row spreadsheet generated in Appleworks 3.0 and was unsuccessful. A 27K Appleworks 2.0 file took 15 minutes to convert with the disk drive active the whole time. On a IIe the program is SLOW without an accelerator, however it does support the Zip Chip.

In order to use the graphing facility, data must first be entered into GeoCalc and the imported into GeoChart; data cannot be entered directly. Forms of chart available are area, bar (horizontal), column (vertical), pie, point, line, scatter, and stacked bar. Number format, font, scale and style can all be varied to some extent.

Conclusions

For the Apple II user the standard of comparison for this program must be Appleworks with Timeout Graph and on a IIe such as mine it fails. GEOS was clearly written for use with a mouse, the keyboard option is clumsy, confusing and slow. In Appleworks 3.0 the spreadsheet is much bigger (127 columns by 9,999 rows) and, being text-based, runs faster than GeoCalc without an accelerator and MUCH faster with the Titan that I use. GeoChart offers no advantage over Timeout Graph (in the latter pie charts can be 'exploded' apart from the additional fonts in the former and the ability to import charts into GeoWrite).

The program is very large for a IIe, hence there is much reading and writing to disk even with 512K extra memory, a further cause of delay (the minimum system requirement is 128K according to the manual!). If you really want a spreadsheet with a graphics user-interface, that is part of an integrated suite of programs, then perhaps you might consider GEOS+GeoCalc. However, unless you have at least 1 Meg of memory, a hard disk, a Zip Chip and a mouse, this is not for you.

David M.L.Morgan

The Graphic Exchange 4.2

Peter Stark looks at a recent upgrade to a powerful graphic utility from Roger Wager

Introduction

The Graphic Exchange is a program which allows many types of Apple II graphic to be converted into graphics of different formats (see below). In the June 1989 issue of Apple 2000, I reviewed an earlier edition of this product, and recommended it enthusiastically. A new and completely rewritten version (v.4.2) of The Graphic Exchange has now appeared, which is GS/OS compatible and is even more of a pleasure to use than the earlier versions. This latest edition uses the Apple IIGS desktop interface, has pull-down menus, and allows the use of desk accessories.

Scope and Operation

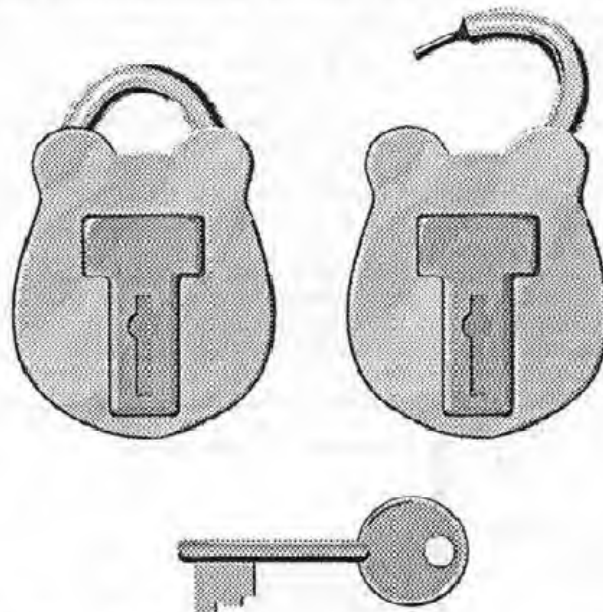
The Graphic Exchange, version 4.2 allows you to interconvert among the following graphics formats:

- Low Resolution
- Double Low Resolution
- High Resolution 140 (colour)
- High Resolution 280 (colour)
- High Resolution 280 (mono)
- Double High Resolution (colour)
- Double High Resolution (mono)
- 320 Resolution Screen (Super High Resolution)
- 320 Resolution Page (Super High Resolution)
- 640 High Resolution Screen (dithered)
- 640 High Resolution Page (dithered)
- 640 High Resolution Screen (4 colours)
- 640 High Resolution Page (4 colours)
- Print Shop Graphic
- Print Shop GS Graphic
- Quickdraw Icon (colour)
- MacPaint Screen (Mono)
- MacPaint Document (mono)
- Unrestricted RGB*
- Newsroom Clip Art
- Newsroom Photo Mono

(*With the Unrestricted RGB mode, each pixel is stored as a 12 bit RGB value. Simultaneous display of different colour palettes is enabled).

This list of graphics formats is more extensive than with the previous (ProDOS 8) versions of The Graphic Exchange. Four types of graphics trans-

fer mode are now available, as follows. 'Standard Transfer' is used for pixel-to-pixel conversion from the source graphic to the destination screen. 'Scaled Transfer' is particularly useful, as (with the aid of the mouse) you can select (a) whatever area you wish to transfer from the source screen and (b) the transfer area on the destination screen. In this way you can enlarge or shrink a given area of a graphic, and can also change its height-to-width ratio if you wish. 'Full Screen Transfer' converts the image on your entire source screen so that it fills the destination screen. The 'Batch Transfer' option is new, and makes it easy to convert a group of original graphics into corresponding destination



graphics of whatever format is currently selected. (There is also a Batch Save feature).

And there was more

Quite a number of other facilities are available as well. One example is the 'Mask' option, which allows you to 'hold back' one or more colours in the original graphic, so that pixels with these particular colours are not transferred to the destination graphic. This is useful if you wish to transfer a

graphic but not its background of a different colour, for instance. Other worthwhile features include 'Invert', 'Slide Show', and 'Initialize Disk'; this last option was absent from the previous versions of The Graphic Exchange. Also available (via the Edit Menu) is a limited Paint option, which allows you to carry out simple editing of destination graphics. With these ranges of transfer modes and interconvertible graphic formats, an enormous number of useful possibilities are now available.

The Main Screen

The main working screen of The Graphic Exchange now has a top menu bar (Apple, File, Edit, Display, Transfer, and Options) and three vertical columns of information. The left-hand column lists the graphic file formats supported at present by The Graphic Exchange. The second column shows the graphic files ('original graphics') that you have already loaded. The right-hand column lists the destination graphic files; these can be either (a) the output from conversion of original graphics or (b) existing graphics, loaded from disk, into which you may wish to paste part of another graphic by using the Scaled or Standard transfer modes. Graphics included in the destination list can be edited in various ways, and can be saved to disk. During the conversion of a file from one graphics format to another, a horizontal 'ther-

mometer' display shows how things are going; this feature can be switched off if not wanted.

What is supplied and what you need

The Graphic Exchange, version 4.2 is supplied on a non-copy-protected 3.5" disk (a second diskette, which contains some MacPaint files, is also provided; I shall explain later what this is for).

Interestingly, the Graphic Exchange disk contains, in addition to the main 'version 4.2' program files and some sample Apple II graphics, a slimmed-down edi-

tion of a previous (ProDOS 8) version (v.3.7) of The Graphic Exchange. The main reason for including this is that it is able to read DOS 3.3 and Macintosh disks directly, whereas the new version 4.2 does not! You can therefore use the included version 3.7 to read MacPaint files from Macintosh disks, save them onto GS/OS disks, and then use the GS/OS version (4.2) of The Graphic Exchange to read the MacPaint files from the GS/OS disks and convert them into Apple II graph-

ics of whatever format you choose. The Macintosh-formatted disk which accompanies The Graphic Exchange helps you to practise this sequence of operations. Likewise, you can use version 3.7 of The Graphic Exchange to read files from DOS 3.3 Print Shop graphics disks for further processing into other formats. These rather circuitous sequences sound complicated but are easy in practice, if a little cumbersome. The supplementary Macintosh disk also has a MacWrite file which describes how to move GS Super Hi Res graphics to the Mac.

The two disks are supplemented by a 56-page manual, a loose-leaf Addendum, and a summary sheet. The manual is informative, written in a clear style, and gives excellent descriptions of the various operations and functions. There are a few very minor printing errors. Pages 6-22 of the manual form a helpful tutorial; pages 23-36 give detailed accounts of the choices available from the various menus; and pages 37-46 provide interesting summaries of the graphics formats now supported by The Graphic Exchange and mention some of the programs which use them. Appendix A (pages 47-56) describes how to use the earlier version (v.3.7, not 3.6 as the manual states) of The Graphic Exchange which is included on the disk. The manual has a good Table of Contents, but I felt that an index would also have been useful.

To use The Graphic Exchange (version 4.2) you need an Apple IIGS with 1 Mb or more of memory, a mouse, and at least one 3.5" drive. The program is easy to install on a hard disk.

Overall Comments

This new version of the Graphic Exchange is even better than the earlier ones. I have found it efficient and versatile, and a pleasure to use. If you own a IIGS and have anything much to do with graphics, I strongly recommend you to think about buying this product.

Peter Stark

info

Product : The Graphic Exchange

Publisher : Roger Wagner

Available from :

Roger Wagner Publishing Inc

1050 Pioneer Way, Suite "P"

El Cajon

CA 92020

U.S.A.

Price : \$49.95 (+ s/h)

\$20.00 (+ s/h) update

Value : ★★★★★

Performance : ★★★★★

Documentation : ★★★★★

High Speed DMA SCSI Card revisited

Ewen Wannop gives us an update on this new SCSI card for the Apple II series computers

Having now used my new Apple High Speed DMA card for some time I thought it would be interesting to report how it differs from the old SCSI card. The Revision C card that it replaces was a good workhorse, but there were some limitations to its use and compatibility. It would not see a Sysquest cartridge unit for instance.

The main change you will see is the blinding speed with which the new card can load data from disk under the right circumstances. The second change is that it sees the Sysquest cartridge drives directly. The third most noticeable difference is in the HDSCPARTITION support program. This new and updated program now low-level formats, partitions and initialises SCSI drives in one simple operation. No longer will you need to use SCSI-Hacker or HDFormat to prepare a raw SCSI drive for use.

You may wish to experiment with sector interleave on your hard disks to optimise access times. You will need to revert to SCSI-Hacker in that case. I found however that HDSCPARTITION gave very acceptable access times by itself.

The new card is able to load data faster because it uses a combination of caching and Direct Memory Access during reads. Caching loads a track

into the card as it is read. If that track is accessed again, it is not re-read as the data is already there.

DMA access allows data to be written directly to RAM and does not have to be passed through the main processor first. Writing to disk cannot be handled in the same way so this operation is not speeded up to any extent. Remember though that loading the data is only part of the story. The data has usually got to be dealt with and this takes up processor time in addition. This is reflected in the timings shown in the box below. Where data is being loaded directly to screen as with the picture show and not being processed, the fastest times are shown.

It is worth noting that the new card costs the same as the old revision C card and in fact has superseded it. It is now in stock with Apple dealers such as Bidmuthin. Beware though that there are some extended memory cards on the IIGs that may not work with the card in its DMA setting. You should switch off DMA on the high speed card to use it with such cards. Of course you will lose the benefit of the faster read times when you do this. Some of the early Applied Engineering cards fall into this category.

Ewen Wannop



Sample access times:

	2.6mhz Rev C	2.6mhz DMA	7mhz Rev C	7mhz DMA
Cold boot to ProSel	52"	45"	42"	37"
AWGS all modules	30"	30"	30"	21"
Assemble to 100k	19' 0"	18' 50"	9' 10"	8' 54"
Save 1 meg file	37"	21"	27"	13"
Load 1 meg file	21"	5"	27"	4"
Save 2 meg file	53"	38"	53"	23"
Load 2 meg file	38"	8.5"	38"	7.5"

Load and display 10 pictures direct to screen:

	Floppy Disk	Ram Disk	Rev C	DMA
2.6 mhz normal	22"	4"	7"	2"
7 mhz TWGS	22"	4"	6.5"	2"

□ Timings made using Rev C SCSI card and High Speed DMA card with the IIGs set to normal 2.6 mhz and TransWarp 7 mhz speeds.

Designing Fractals to Order

Mike Bass shows us how to draw our own Fractals

An article with this title was published in "Electronics World + Wireless World" in August 1990, pages 703-708, including a listing in GWBasic. If you would like to try this on your Apple II, with Applesoft Basic, type in lines 10 to 220 from that original article and follow them with these. Lines 340 to 440 are my clumsy way of doing:

IF .. THEN .. ELSE ..

The programme will draw a rose in the centre of the Hi-res screen. Be patient, it will take a quarter of an hour to do 10000 iterations, although a compiled version using TASC reduces this to four minutes.

Different patterns

The original article, which is six pages long, will explain how line 60 and the DATA lines 80 to 120 can be re-written to produce the other interesting patterns illustrated. Lines 440 to 480 can be omitted for these other patterns, for which the probabilities add up exactly to 1. You will find that some of the references to the figures are wrong, and there is a trivial misprint in the fifth equation for the pentagon, but it is an interesting exercise to put it right. Have fun!

Mike Bass

10 to 220 from "Electronics World"

```

230 REM Set up plotting environment
240 HGR : HCOLOR= 3
250 POKE - 16302,0: REM full screen
290 X = 0
300 Y = 0
310 REM do 10000 iterations
320 FOR N = 1 TO 10000
330 PK = RND (1)
340 REM next was all one line in GWBasic
350 IF PK < = P(1) THEN K = 1: GOTO 500
360 IF PK < = P(2) THEN K = 2: GOTO 500
370 IF PK < = P(3) THEN K = 3: GOTO 500
380 IF PK < = P(4) THEN K = 4: GOTO 500
390 IF PK < = P(5) THEN K = 5: GOTO 500
400 IF PK < = P(6) THEN K = 6: GOTO 500
410 IF PK < = P(7) THEN K = 7: GOTO 500
420 IF PK < = P(8) THEN K = 8: GOTO 500
430 IF PK < = P(9) THEN K = 9: GOTO 500
440 REM if random number > Probability(9)
450 XNXT = .125 * (7 - X * X - X - X)
460 YNXT = .217 * X * X - .144 * X - .361
480 GOTO 530
500 REM set up the equations
510 XNXT = A(K) * X + B(K) * Y + E(K)
520 YNXT = C(K) * X + D(K) * Y + F(K)
530 X = XNXT
540 Y = YNXT
550 REM adjust scale of plotting
560 XP = 139 + 95 * X
570 YP = 95 - 95 * Y
580 IF N > 10 THEN HPLLOT XP,YP
590 NEXT N
600 PRINT CHR$(7): CALL - 756
610 TEXT : HOME : END

```

The original listing from Wireless World August 1990

```

1000 REM Programme for Fractals
1005 REM from WIRELESS WORLD August 1990, page 708
1010 REM The listing for iterating a set of affine
      transformations
1020 REM which may include one polynomial pair
1030 REM Up to nine pairs of equations can be handled
      here.
1035 REM !J,M,N,XP,YP
1040 DIM A(9),B(9),C(9),D(9),E(9),F(9),P(9)
1050 REM M is the number of transformations excluding
      the polynomial.
1060 M = 5
1070 REM Each line of data is a, b, c, d, e, f, p
      for one transformation.
1075 REM X = aX + bY + e
1076 REM Y = cX + dY + f
1077 REM probability = p
1080 DATA .5,.866,-.866,.5,0,0,.4
1090 DATA .5,.289,-.289,.5,0,0,.11
1100 DATA -1,0,0,1,0,0,.12
1110 DATA -1,0,0,-1,0,0,.12
1120 DATA 1,0,0,-1,0,0,.12
1130 PT = 0
1140 FOR J = 1 TO M
1150 READ A(J),B(J),C(J),D(J),E(J),F(J)
1160 READ PK
1170 PT = PT + PK
1180 P(J) = PT
1190 NEXT J
1200 FOR J = M + 1 TO 9
1210 P(J) = PT
1220 NEXT J
1230 REM Set up plotting environment
1240 HGR : HCOLOR= 3
1250 POKE - 16302,0: REM full screen
1260 :
1270 :
1280 :
1290 X = 0
1300 Y = 0
1310 REM do 10000 iterations
1320 FOR N = 1 TO 10000
1330 PK = RND (1)
1340 REM next was all one line in GWBasic
1350 IF PK < = P(1) THEN K = 1: GOTO 1500
1360 IF PK < = P(2) THEN K = 2: GOTO 1500
1370 IF PK < = P(3) THEN K = 3: GOTO 1500
1380 IF PK < = P(4) THEN K = 4: GOTO 1500
1390 IF PK < = P(5) THEN K = 5: GOTO 1500
1400 IF PK < = P(6) THEN K = 6: GOTO 1500
1410 IF PK < = P(7) THEN K = 7: GOTO 1500
1420 IF PK < = P(8) THEN K = 8: GOTO 1500
1430 IF PK < = P(9) THEN K = 9: GOTO 1500
1440 REM if random number > Probability(9)
1450 XNXT = .125 * (7 - X * X - X - X)
1460 YNXT = .217 * X * X - .144 * X - .361
1480 GOTO 1530
1500 REM set up the equations
1510 XNXT = A(K) * X + B(K) * Y + E(K)
1520 YNXT = C(K) * X + D(K) * Y + F(K)
1530 X = XNXT
1540 Y = YNXT
1550 REM line 400 incorporated in line 1580
1560 XP = 139 + 95 * X
1570 YP = 95 - 95 * Y
1580 IF N > 10 THEN HPLLOT XP,YP
1590 NEXT N
1600 PRINT CHR$(7): CALL - 756
1610 TEXT : HOME : END

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Apple IIGs Software Selector

Title	Publisher	Memory Required	Star Rating	Apple2000 Review	MGA Price
BUSINESS					
List Plus	Activision	768K	****		
Paint/Write/Draw Bundle	Activision				189.95
Programmer's Online Companion	Addison Wesley				
Wordbench	Addison Wesley				
Appleworks GS Fonts I	Applewood	Fonts			29.95
Appleworks GS Fonts II	Applewood	Fonts			34.95
Beagle Bros. Clip Art 1 & 2	Beagle Bros.				
Beagle Bros. GS Desk Accs. (formerly DeskWorks)	Beagle Bros.	512K			
BeagleWrite GS. (formerly Multiscribe GS)	Beagle Bros	768K	****	Oct.87	
Beagle Bros. Font Lib./V.1 (formerly Styleware Font....)	Beagle Bros.	Fonts			
Appleworks GS	Claris	1.25Mb			249.95
Dental Office Management IIP	CMA Micro Computer	512K			
Medical Office Management IIP	CMA Micro Computer	512K			
Notes 'N Files	Datapak	512K	*****	Dec.87	
DeluxeWrite	Electronic Arts	768K	***		
DeluxeWrite w/DeluxePaint II	Electronic Arts	768K			
Salary Magic	Magic Software Inc.	512K			
BusinessWorks	Manzanita Software	128K			
BusinessWorks Bundle (Sys Manager, G/L, A/P, A/R, Inventory)	Manzanita Software				
BusinessWorks Payroll	Manzanita Software-				
Managing Your Money v4.0	MECA				
Calendar Crafter School Ed.	Mecc	768K	****		
Medley	Milliken	1.25Mb	***	Aug.89	
Visualizer	PBI Software	512K		Aug.87	79.95
Macro Mate	Roger Wagner Publ	768K	****	Aug.89	
Bank Street Writer III	Scholastic	256K			
Sensible Grammar ProDOS	Sensible Software				
GraphicWriter 3.0	Seven Hills Software	512K			102.35
Font Factory GS	Seven Hills Software	768K			
Form Set Business Forms	Softview				
TaxView Planner	Softview				
TaxView Federal	Softview	1.25Mb			
California Supplement	Softview	Reqs.above			
N.Y. Supplement	Softview	Reqs.above			
Softwood GS File	Softwood	768K			
FingerPrint Slide-Show	Thirdware Computer Prd	256K			
Font Pack 1, 2	Timeworks				
Publish-It v3.0	Timeworks				
VIP Professional	VIP	512K			228.85
WordPerfect 2.0	Word Perfect Corp.	512K	****		
Exorcizer	Vitesse, Inc				
Genesis	Vitesse, Inc				
Renaissance	Vitesse, Inc				
Salvation:Guardian	Vitesse, Inc				
COMMUNICATIONS					
Teleworks Plus	Activision	512K			
Gazelle	Bidmuthin.	128K		Apr.87	
Burple	Midwest Data Source Inc.				
EDUCATIONAL					
Chemistry IIGS	Addison-Wesley	512K			
Earth Science IIGS	Addison-Wesley	512K			
Life Science IIGS	Addison-Wesley	512K			
Physical Science IIGS	Addison-Wesley	512K			
World History IIGS	Addison-Wesley	512K			
Dinosaurs	Advanced Ideas Inc.	512K			
Audubon Wildlife Adventures:					
:Grizzly Bears	Advanced Ideas Inc.	512K	****		
:Whales	Advanced Ideas Inc.	512K			
Stars And Planets (ages 2-6)	Advanced Ideas Inc.	512K			34.95
Linkword Language Courses:					
Spanish, French, German, Russian, Italian,					

Greek,Dutch,Portuguese	Artworx Software	512K		
Ticket to Hollywood	Blue Lion Software	512K		
Ticket to London	Blue Lion Software	512K		
Ticket to Paris	Blue Lion Software	512K		
Ticket to Spain	Blue Lion Software	512K		
Ticket to The National Parks	Blue Lion Software	512K		
Ticket to Washington D.C.	Blue Lion Software	512K		
Designasaurus	Britannica Software	768K		
Jigsaw	Britannica Software	768K		
Revolution '76	Britannica Software	768K		
Geometry	Broderbund	768K	*****	89.95
Geometry School Edition	Broderbund	768K		
Geometry Lab Pack	Broderbund	768K		
Where in the World Is Carmen Sandiego?	Broderbund	512K		
Where in the USA Is Carmen Sandiego?	Broderbund	512K		
Ugly Duckling	Byte Works			
CSL Marks	Chancery Software	128K		
Joshua's Reading Machine	Compu-Teach			
Once Upon a Time .. II	Compu-Teach	512K		
Once Upon Talking IIGS	Compu-Teach	512K		
Studymate: The Grade Booster	Compu-Teach			
Dueling Questions	Coyote Computing	512K		
Modular Management System for Schools (MMS)	Computer Resources Inc.	1Mb		
Elfe (French Grammar)	Conduit	512K		
Writer's Helper Stage II	Conduit	128K		
Cyberlearn	Cyberlearn Inc.	256K		
Cyberworld	Cyberlearn Inc.	256K		
Alge-Blaster Plus	Davidson & Assoc.			
Math Blaster Plus	Davidson & Assoc.	512K		34.95
Spell It Plus	Davidson & Assoc.			
Talking Math Blaster Plus	Davidson & Assoc.			
Talking Math & Me	Davidson & Assoc.	512K	****	
Talking Reading & Me	Davidson & Assoc.	512K		
Word Attack Plus	Davidson & Assoc.			
Designasaurus	Designwar	768K		32.95
Grade Busters 1/2/3	Disco-Tec			67.95
Volcanoes	Earthware			47.95
Fractal Explorer	Eclat	256K	**	Oct.89
Education Activities	Educ. Activities Inc.	128K		
Computer Mad Libs	Electronic Arts	768K		
First Letters & Words	First Byte or E.Arts	512K	***	39.95
First Shapes	First Byte or E.Arts	512K		39.95
Kidtalk	First Byte or E.Arts	512K		34.95
MadLibs	First Byte or E.Arts	-		19.95
Mathtalk	First Byte or E.Arts	512K		39.95
Mathtalk Fractions	First Byte or E.Arts	512K	****	39.95
Smoothtalker	First Byte or E.Arts	512K		
Speller Bee	First Byte or E.Arts	512K		39.95
The Dinosaur Discovery Kit	First Byte or E.Arts	512K		
The Puzzle Story Book	First Byte or E.Arts	512K		
The Rhyming Notebook	First Byte or E.Arts	512K		
En Route and Caminando	Gessler Pub. Co.Inc.			
Kidstime II	Great Wave	512K		Feb.87 32.95
The Integrated Learning System	Josten Learning Corp.	1.25Mb		
Krell Software (SAT,TOEFL,GRE...)	Krell Software Corp.			
High School/College exam prep)	Laureate Learning Sys.	512K		
First Words for the Apple IIGS	Laureate Learning Sys.	512K		
First Words II for the ...	Lawrence			29.95
McGee	Learning Company	256K		32.95
Gertrudes Secrets	Learning Company	256K		28.69
Magic Spells	Learning Company	256K		28.69
Math Rabbit	Learning Company	256K		
Reader Rabbit	Learning Company	256K		
talking version	Learning Company			39.95
Rockys Boots	Learning Company	256K		37.95
Think Quick	Learning Company	256K		
Writer Rabbit	Learning Company	256K		
Writing & Publishing Center	Learning Company			
World GeoGraph	MECC	768K		
Sky Travel (Astronomy)	Microillusions	256K		
Milliken Storyteller				
Master Package (3 stories)	Milliken Publishing			
Animal Tracker	Nature Boy Software	768K		
Bird Watcher	Nature Boy Software			
Talking Stickybear Alphabet	Optimum Resource	512K	****	
Global Express Atlas:USA	Orange Cherry Soft.	512K		
Global Express Atlas:World	Orange Cherry Soft.	512K		

Talking Animals	Orange Cherry Soft.	512K		
Talking Dinosaurs	Orange Cherry Soft.	512K		
Talking Numbers	Orange Cherry Soft.	512K		
Talking First Reader	Orange Cherry Soft.	512K		
Talking First Writer	Orange Cherry Soft.	512K		
Talking School Bus	Orange Cherry Soft.	512K		
Talking Alpha Chimp	Orange Cherry Soft.	512K		
Talking Colors and Shapes	Orange Cherry Soft.	512K		
Talking Reading Railroad	Orange Cherry Soft.	512K		
Talking Addition & Subtract.	Orange Cherry Soft.	512K		
Talking ABC's	Orange Cherry Soft.	512K		
Talking Speller	Orange Cherry Soft.	512K		
Talking Clock	Orange Cherry Soft.	512K		
Talking Money	Orange Cherry Soft.	512K		
Mr.Py And I Coloring				
Adventures	Pygraphics Corp.	1.25Mb		
Charlie Brown's ABC	Random House			29.95
Peanut's Maze Marathon	Random House			29.95
Snoopy's Reading Machine	Random House			29.95
Report Card II	Sensible Software			
Mixed-up Mother Goose	Sierra			22.95
Speed Reader Tutor IV	Simon & Shuster			
Typing Tutor IV Plus	Simon & Shuster	512K		39.95
Mavis Beacon Typing	Software Toolworks	512K		34.95
Kidwriter Gold	Spinnaker			
Adventures of Sindbad	Unicorn	-		34.95
Aesop's Fables	Unicorn	768K		37.95
All About America	Unicorn	-		39.95
Animal Kingdom	Unicorn	1MB		34.95
Animal Kingdom:School Edn	Unicorn			34.95
Ghastly Grammer	Unicorn	-		47.95
Kiderama	Unicorn	-		37.95
Land of the Unicorn	Unicorn	-		39.95
Logic Master	Unicorn	-		37.95
Magical Myths	Unicorn	768K		37.95
Math Wizard	Unicorn	-		37.95
talking version	Unicorn	768K		34.95
Read & Rhyme	Unicorn	768K		34.95
Read-A-Rama	Unicorn	-		39.95
Tales of Arabian Nights	Unicorn	-		37.95
Word Master Data Disk	Unicorn			
Word Master Vocabulary				
Builder	Unicorn	-		37.95
Word Master Vocabulary				
Builder	Unicorn	1MB		34.95
ENTERTAINMENT				
The Blue Angels	Accolade	-		39.95
Bubble Ghost	Accolade	512K	***	24.95
Fast Break	Accolade			
Grand Prix Circuit	Accolade			34.95
Hardball!	Accolade	512K	****	
Heatwave:Offshore Racing	Accolade			
Jack Nicklaus Golf	Accolade	512K		
Championship Courses 1989	Accolade	Scenery		
Mean 18	Accolade	512K		
Mean 18 Champ. Courses 1989	Accolade	Scenery		
Mean 18 Famous Courses Vol.II	Accolade	Scenery		
Mean 18 Famous Courses Vol.III	Accolade	Scenery		
Mean 18 Famous Courses Vol.IV	Accolade	Scenery		
Mini-Putt	Accolade	512K	***	
Pinball Wizard	Accolade	256K		
Serve and Volley	Accolade	512K	****	
The Duel:Test Drive II	Accolade	512K	****	29.95
:Calif.Challenge	Accolade	Scenery		
:Super Cars	Accolade	Scenery		
:Muscle Cars	Accolade	Scenery		
:European Roadways	Accolade	Scenery		
:International Course	Accolade	Scenery		
Third Courier	Accolade			
4th + Inches	Accolade	512K	***	
4th + Inches Team Construct.	Accolade	Library		
Blackjack Academy	Activision	-		29.95
GBA Champ. Basketball	Activision/Medlagic	512K	****	
Hacker II	Activision/Medlagic	512K		19.95
The Last Ninja	Activision/Medlagic	512K	***	19.95
Shanghai	Activision/Medlagic	512K		
Sky Travel	Activision			
Tass Times in Tonetown	Activision/Medlagic	512K		22.95
AAARGH	Arcadia			29.95

Bridge 6.0	Artworx Software Co.	512K		29.95
GrailQuest	Artworx Software Co.	512K		
Kaleidokubes	Artworx Software Co.	512K		
Strip Poker 2	Software Co.	512K		
Dream Zone	Baudville	512K		29.95
Mad Match	Baudville	512K	***	
Gnarly Golf	Britannica Software	512K		
Great Western Shootout	Britannica Software	512K		
JigSaw	Britannica Software			
LaserForce	Britannica Software	1.25Mb		
Task Force	Britannica Software			
Ancient Land of Y's	Broderbund	-		34.95
Down Hill Challenge	Broderbund			
Wings of Fury	Broderbund			
Club Backgammon	California Dreams	512K	***	
Mancala	California Dreams	512K		
Triango	California Dreams	512K	*****	
Tunnels of Armageddon	California Dreams	-		29.95
Vegas Craps	California Dreams	512K		
Vegas Gambler	California Dreams	512K		
Crystal Quest	Cassidy & Greene Inc.	512K	****	34.95
Defender of the Crown	Cinemaware	768K		
King of Chicago	Cinemaware	768K		Apr.89 34.95
Rocket Ranger	Cinemaware			
S.D.I.	Cinemaware	1Mb		
Sindbad and the Throne of the Falcon	Cinemaware	768K		
Star Saga 1, 2	Cinemaware			
The Three Stooges	Cinemaware			
TV Sports: Football	Cinemaware			
Solitaire and Cribbage	Computrek	512K		
Mines of Moria I,II	DAR Systems Int.	256K		
Realm of Altair Series I-III	DAR Systems Int.	256K		
Trilogy	DAR Systems Int.			
Hunt for Red October	Datasoft	768K		34.95
Tomahawk	Datasoft	512K	****	
Sword of Sodor	Discovery Software	768K		29.99
Zoom!	Discovery Software	512K		24.95
Garfield Trivia Game	DLM Teaching Resources	64K		
Geographic Jigsaw	Eclat			
Bards Tale I,II	Electronic Arts	512K		29.95
Halls of Montezuma	Electronic Arts			
Life and Death	Electronic Arts			
Marble Madness	Electronic Arts	512K		Jun.89
Puppeteers	Electronic Arts			
Reach for the Stars	Electronic Arts	-		38.00
Skate or Die	Electronic Arts	768K	****	
World Tour Golf	Electronic Arts	512K		
Zany Golf	Electronic Arts	512K	*****	Apr.89
California Games	Epyx	512K	*****	
Destroyer	Epyx	512K	****	Dec 88
Final Assault	Epyx	512K	***	
Impossible Mission II	Epyx	512K	****	
L.A.Crackdown	Epyx	-	***	
Project Neptune (soon)	Epyx			
Street Sports:Soccer	Epyx	512K		
Sub Battle Simulator	Epyx	512K	***	
Winter Games	Epyx	512K	***	
World Games	Epyx	512K		
Dungeon Master	FIL	1Mb		29.95
Beyond Zork	Infocom	512K		37.95
Journey	Infocom			
Quarterstaff (1989)	Infocom			
Sherlock Holmes:	Infocom	-		32.95
Riddle of the Crown Jewels				
Shogun	Infocom			
Zork Zero	Infocom			
Battle Chess	InterPlay	512K		
Dragon Wars	Interplay			
Neuromancer	Interplay	512K		34.95
Mighty Nerd	ISM			34.95
Superpuzzle	Lynx Comp. Prod.	512K		
Star Saga:I,II	Masterplay	512K		59.95
Shanghai	Mediagenic	-		
Battle Chess	Mediagenic	-		39.95
Barbarian	Melbourne House			
Greg Norman's Ultimate Golf	Melbourne House			
John Elway's Quarterback	Melbourne House			
Magic Johnson's Basketball	MelbourneHouse			

War in Middle Earth	Melbourne House	768K		
BlackJack Academy	Microillusions	512K		
Dondra:A New Beginning	Microillusions	768K		
Faery Tale Adventure	Microillusions	512K		
Fire Power	Microillusions			
Flintstones	Microillusions	768K		
Questmaster I	Microillusions	768K		
Scooby Doo	Microillusions	768K		
Universal Military Simulator	MicroPlay Software			
Pirates	Microprose	256K	*****	
Silent Service	Microprose	256K	*****	24.95
Xenocide	Micro Revelations	512K		34.95
Bad Street Brawler	Mindscape	-		24.95
Balance of Power 1990	Mindscape	1Mb		29.99
Captain Blood	Mindscape	512K		34.95
Defender of the Crown	Mindscape	-		39.95
Deja Vu:The Nightmare Comes True	Mindscape	768K		29.99
Deja Vu II:Lost in Las Vegas	Mindscape	768K	***	29.99
Cauntlet	Mindscape	256K	***	34.95
Gin & Cribbage	Mindscape	-		34.99
Hostage	Mindscape	512K		
Paper Boy	Mindscape	256K	***	29.95
Strategic Defence Initiative	Mindscape	512K		37.95
Shadow Gate	Mindscape	768K		29.99
Super Star Ice Hockey	Mindscape	512K	**	
Super Star Soccer	Mindscape			
Uninvited	Mindscape	768K		29.99
Knights of Legend	Origin Systems	-		29.99
Omega	Origin Systems	-		29.99
Space Rogue	Origin Systems	-		29.99
Time of Lore	Origin Systems			
Wind Walker	Origin Systems	-		29.99
Alien Mind	PBI Software	512K		
Cavern Cobra	PBI Software	768K	**	29.95
Monte Carlo	PBI Software	512K		29.95
Sea Strike	PBI Software	512K		24.95
Strategic Conquest II	PBI Software	128K		29.95
The Tower of Myraglen	PBI Software	512K		34.95
Black Cauldron	Sierra On-Line			
Gold Rush	Sierra On-Line			
Kings Quest I,II,III,IV	Sierra On-line	512K		29.95
Leisure Suit Larry I	Sierra On-line	512K		29.95
Leisure Suit Larry II	Sierra On-line	512K		34.95
Manhunter: New York	Sierra On-line	512K		
Mixed-Up Mother Goose	Sierra On-line	512K		
Police Quest	Sierra On-line	512K		29.95
Silpheed	Sierra On-Line	512K		29.95
Space Quest I	Sierra On-line	512K	****	29.95
Space Quest II	Sierra On-line	512K		37.95
Thexder	Sierra On-line	512K	****	22.95
3-D Helicopter Simulator	Sierra On-line	512K		
Cribbage/Gin King	Software Toolworks			
Keef the Thief	Software Toolworks			
Life & Death	Software Toolworks	1MB		34.95
The Fidelity ChessMaster 2000	Software Toolworks	512K		29.99
The Fidelity ChessMaster 2100	Software Toolworks	512K		29.99
Dondra:A New Beginning	Spectrum Holobyte	-		29.95
Soko-Ban	Spectrum Holobyte	-	**	
Solitaire Royale	Spectrum Holobyte			
Tetris	Spectrum Holobyte	512K	*****	29.95
The Curse of the Azure Bonds	Strategic Simulations			
Questron II	Strategic Simulations	512K		29.95
Roadwar 2000	Strategic Simulations	512K		34.95
Arkanoid	Taito Software	512K	*****	
Arkanoid II Revenge of Doh	Taito Software	512K		24.95
Arkanoid Construction Set	Taito Software			
Bubble Bobble	Taito Software			
Rastan	Taito Software			
Renegade	Taito Software			24.95
Qix	Taito Software			
Dark Castle	Three Sixty	512K		29.95
Warlock	Three Sixty	512K	***	29.95
2088 The Cryllan Mission	Victory Software	-		39.95
GRAPHICS				
Design Your Own Home:				
Architecture	Abacadata	768K		59.00
Interiors	Abacadata	1Mb	***	
Landscape	Abacadata			

Architecture Libraries	Abracadata	Library		
Interior Libraries: Home Plans	Library	Library		
: Office Plans	Abracadata	512K		47.95
Graphics Supermarket	Abracadata	512K		147.95
Graphics Super.(w/source code)	Accolade	768K	***	
The Graphics Studio	Activision/Mediagenic	Lib.		22.95
Clip Art Gallery	Activision/Mediagenic	512K		
Draw Plus	Activision/Mediagenic	Lib.		22.95
Paintworks Clip Art Gallery	Activision/Mediagenic	1.25Mb	****	
Paintworks Gold	Activision/Mediagenic	512K		
Paintworks Plus	Activision/Mediagenic	512K		
Paint Write Draw	Activision/Mediagenic	512K	****	
Postcards	Baudville			
Award Maker Plus	Baudville	512K		50.95
816/Paint	Baudville	512K		97.95
816/Paint Education version	Baudville	512K		79.95
BeagleDraw	Beagle Bros.			
(formerly TopDraw)	Beagle Bros.	Library		34.95
Beagle Bros. Clip Art/V.1.	Brac	Library		34.95
Print Shop Lovers' Utility Set	Broderbund	256K	****	
Fantavision	Broderbund	-		57.95
Fantavision School Version	Broderbund	512K	*****	49.95
The Print Shop	Broderbund			
The Print Shop School Version	Broderbund			
The Print Shop Graphics	Broderbund	Library		22.95
Library Party Edition	Broderbund	Library		22.95
The Print Shop Graphics	Broderbund	512K	****	
Library Sampler Edition	Broderbund	-		59.95
ShowOff	Broderbund			
ShowOff School Version	Broderbund	Library		54.95
ShowOff Graphics Collection:	Broderbund	Library		24.95
Presentation Graphics	Digital Vision	512K	****	
ShowOff Graphics Collection:	Eclat	-		
World Events	Electronic Arts	1Mb		
ComputerEyes V2.2	Electronic Arts	768K		
Fractal Explorer	Electronic Arts	Library		22.95
Cartooners	Electronic Arts	Library		22.95
Deluxe Paint II	Electronic Arts	Library		22.95
Art Parts: Vol.1	Electronic Arts	768K	****	
Art Parts: Vol.2	Jada Graphics Inc.	512K		
Seasons & Holidays	Knowledgeware	512K		
Art & Film Director	Knowledgeware	512K		
Image Masters:Basic Paint	Lynx Comp. Prod.	512K		
Video Link	Mecc	-		39.95
Viva	Mecc	-		49.00
Supergraphix256	Mediagenic			
(Reqs.Applesoft)	Oltrad	-		149.95
Calendar Crafter	Oltrad			
Calendar Crafter	Oltrad			
School Version	Oltrad			
Paintworks Gold	Oltrad			
Graphic Images I:Life Science	Publishing Int.	Library	****	
Graphic Images III:	Roger Wagner	768K	****	Jun.89 39.95
Things You See Every Day	Scholastic	256K		
Graphic Images IV:	So What Software	512K	**	
America: Old and New				
Hometown USA				
(Reqs.any paint prog.)				
Graphic Exchange				
SuperPrint				
ICONIX				
LANGUAGES & UTILITIES				
Graphics Supermarket	Abracadata	512K		
* (with source code)	Abracadata	512K		
AC/BASIC	Absoft	512K		99.95
Apple IIGS Icon Editor	APDA	512K		
Apple IIGS Source Code Sampler	APDA			
(Reqs.APW or MPW)	APDA			
APW C: C V1.02	APDA	1.25Mb		
APW:Programmers Workshop V1.02	APDA			
Update(incl manuals)	APDA	1.25Mb		49.95
GSBug & Debugging Tools V4.0B1	APDA	512K		
GS/OS V5.04	Apple	512K		
PS Lovers' Utility Set	Big Red Computer			
Merlin to ORCA	ByteWorks			
ORCA/Basic (due 1989)	ByteWorks			
ORCA/C	ByteWorks	1Mb		
ORCA/C Desktop Debugger	ByteWorks			

ORCA/Design Master	ByteWorks			
ORCA/Desktop (Reqs.APW/ORCA)	ByteWorks	1Mb		
ORCA/Disassembler	ByteWorks			
ORCA/M 1.1 Assembler	ByteWorks	768K		
ORCA/M Subroutine Lib. Source	ByteWorks	Library		
ORCA/Pascal Desktop	ByteWorks	1Mb		
ORCA/Pascal Desktop Debugger	ByteWorks			
Utility Package #1	ByteWorks			
GS Calender DA	DataPak Software	DA		
Diversi-Key	Diversified Software	512K		
Diversi-Cache	Diversified Software	512K		
Disk Util II	FWB Software	512K		
ProSel-16	Glen Bredon	512K	****	Aug.89
GSFORTH	GSF			
Lisa 816 V5.0	H.A.L. Labs	1Mb		
LifeGuard	MindCraft Pub. Corp.	256K		
ISYS FORTH	Illyes Systems	256K		
Micol Advanced Basic 3.0	Micol Systems	768K		
Micol Macro	Micol Systems	512K		Dec.87
GS Memory Test	On Three Inc.	512K		
The Desktop Manager	On Three Inc.	DA		
TDM Super Accessories #1	On Three Inc.	DA		
TDM Toolkit (Reqs.APW)	On Three Inc.	512K		
HyperStudio	Roger Wagner Publ.	1.25Mb		Oct.89
Merlin 16+	Roger Wagner Publ.			
SoftSwitch	Roger Wagner Publ.	768K		
Disk Initializer	Seven Hills Software	DA		
DeskPak Desk Accs.	Simple Software Systems	NDA	**	
GeneSys	Simple Software Systems			
Call-Box (Reqs.Applesoft)	So What Software	1Mb		
Disc Commander	So What Software	512K		
Hyper Launch	So What Software			
Menu Maker	So What Software	512K		
Screen Thief	So What Software	1Mb		
CDA Power: Vol.I	360 Microsystems	CDA		
360 Text Toolkit V2.0 (APW)				
:Library with Macros	360 Microsystems			
:ORCA/Pascal I/F (Reqs.Lib.)	360 Microsystems			
:APW C I/F (Reqs.Library)	360 Microsystems			
File Utilities I & II (APW)	360 Microsystems			
TML Basic V1.10	TML Systems	512K		
TML Pascal (APW Version)	TML Systems	1Mb		
TML Pascal (Stand Alone)	TML Systems	768K	****	
TML Pascal II	TML Systems	768K		
TML Source Code Library	TML Systems	Library		
TML SCL II	TML Systems	Library		
TML Speech Toolkit	TML System	Library		
SOUND				
The Music Studio 2.0	Activision/Mediagenic	512K		
Future Sound	Applied Visions	-	****	
Jam Session	Broderbund	512K		
Diversi-Tune	Diversified Software Research Inc.	512K	****	
Hot & Cool Jazz	Electronic Arts	Library		22.95
It's Only Rock 'N Roll	Electronic Arts	Library		22.95
Instant Music	Electronic Arts	512K		
Instant Synthesizer	Electronic Arts	768K	****	
Music Construction Set	Electronic Arts	256K		
ECS Music Training Programs				
:12 different courses (MIDI)	Electronic Courseware	512K		
:21st Century Music Series	Electronic Courseware	512K		
Supermusic	Lynx Comp. Prod.	512K		
(Reqs.Applesoft)				
Musicshapes	Music Systems for Learning Inc.	512K	***	
Musicshapes School Lab Pack	Music Systems for Learning Inc.	512K	***	
Master Tracks Jr.	Passport Designs Inc.	768K	****	
Master Tracks Pro.	Passport Designs Inc.	1.25Mb		349.95
Pyware Instrument Designer	Pygraphics	512K	****	
Pyware MIDI Translator	Pygraphics	Reqs.above		
Pyware Music Writer :				
:Limited Edition	Pygraphics	768K		
:Special Edition	Pygraphics	768K		
:Pro. Edition	Pygraphics	768K		
Pyware Music Writer 3 :				
with MIDI Translator	Pygraphics	-		495.00
SONIX (Reqs.Applesoft)	So What Software	1Mb		

List No.5/ 22 Dec. 1990

Compiled by E.E. Littlewood. Originally compiled by John Kishimoto. With thanks to John Gurr of MGA SoftCat

Apple II Series ProDOS Text File Readers

William Watson reports on the
plethora of text file readers available
to the Apple II

In the beginning ...

In my early days with Apple II I would use DOS 3.3 and CP/M. There was one feature of CP/M which I sorely missed under DOS. At the CP/M prompt I was able to type 'type filename' and was able to display on the screen the contents of any document or text file that I came across. When ProDOS came along I presumed that the inclusion of such a command was obvious but it was not to be.

Along came the PC and with it a CP/M look-a-like environment and, of course, 'type'.

It would seem that others have missed this feature under ProDOS and have sought to do something about it. There are now a number of devices around which allows one to read various text files.

Let me explain the circumstances in which I have found this burning need to have a 'type' command.

The Real Problem

I have collections of freeware and shareware utilities and programs that I have either acquired from Apple2000, Bulletin Boards, Public Domain Software Libraries or friends. There they sit on my disks having been given names which are meant to tell you something about them - and you only have a limited number of characters in which to do it. Trouble is, one forgets. An example that I came across recently - A2FX.07 - obvious, isn't it. Well, it was supposed to tell me that it was an Apple II File Exchange program and that it was version .07. In the subdirectory where I had stored the application was a text file which I knew would tell me all about its features. How was I to read it?

How to read the files?

I could load up a word-processor such as AppleWorks or AppleWriter, load in the text file and thus read it. I may then have discovered that this did not refer to the utility that I was looking for. Never mind I could 'Quit' from the application, return to my 'catalog' facility and continue my search, find another likely file and start the process all over again. Very tedious!

In reality what I have is a program

called 'ProSel' which I run on my Apple IIs. This is a 'front-end' program selector with a range of housekeeping utilities which includes a 'type' command - easy. I can 'catalog' my disks, find the text file that I want to read and then display it on the screen.

How about ProSel?

On a 64k Apple with a program selector such as ProSel 3.9 (the latest version of ProSel which will run on this machine) there is a 'type' command. It is to be found in one of its utilities called 'Cat Doctor'.

[NB On the Apple IIs, ProSel (recent versions) allows you to access NDAs by pressing open-apple-shift-8 (OA-8). This gives you a 'Finder' style top menu bar from which to select your NDA by pulling down on the Apple symbol in the left-hand corner and releasing the mouse button when you have highlighted the one you want]

Not everyone uses ProSel (Apple IIs users, you should, it will revolutionise your use of the machine). A review written by Dave Ward has appeared in Apple2000 magazine. I, therefore, set out to see what other Apple ProDOS users could use. It turned out that there are a number of applications that may be of interest to Apple II, //e, //c and IIs users.

There are of course others ...

I refer to some of them here. There may be better ones around. Why not drop a line to me, c/o The Editor, with your findings. This article cannot attempt to be definitive and your contributions would be most welcome.

I am adding a glossary as well to explain some of the terms used in this article which may be of use to new users. The tragedy of glossaries, however, is that, because of space limitations, it is likely that most definitions will contain terminology that itself may need explaining. My attitude is that any glossary is better than no glossary.

I am conscious that there are now a lot of second-user Apple II computers becoming available to hitherto non-Apple users without manuals and usually very little information.

GLOSSARY

Apple II, II Europlus

These are the early Apple computers. In this country most were 48k machines. They run an operating system called DOS. DOS 3.3 became the final and accepted version prior to ProDOS. ProDOS required 64k. The memory of Apple IIs can be increased to 64k and more. They will then run ProDOS.

Apple //e

This is a 64k or 128k machine capable of running DOS 3.3 and ProDOS.

Apple //e enhanced

This is a //e fitted with a 65C02 processor and new Roms.

Apple //c

This is a portable 128k Apple //e. It will run DOS 3.3 and ProDOS.

Apple //c+

This is a portable 1 mb Apple //c with 3.5 inch drive.

Apple IIs

This is a 256k minimum machine which will run the 8 bit ProDOS of the earlier machines and a new 16 bit ProDOS.

Classic Desk Accessory (CDA)

Whilst running many applications (for example AppleWorks) on the Apple IIs when you press Open-apple-control-escape you are transported to 'Desk Accessories' which includes the Control Panel. From here you may launch CDAs. These are programs which you may use without disrupting the application you are using. When you have finished with the CDA and you 'quit' from it you are returned to your original application where you left off.

If you wish to add your own CDAs to your system you have to know a little about the set up of the 'system'. Once you have added CDAs they will only be loaded for use following a fresh boot.

A CDA is recognised by its file type 'CDA'. To add one to your system you will have to copy the file to the subdirectory called 'Desk.Accs' which is to be found in the subdirectory call 'system'.

The operating 'system' referred to is currently 5.0.4 and has a file structure (stripped here to show where to put the CDAs).

/MY.DISK/SYSTEM/DESK.ACCS/MY.CDA
or

MY.DISK —> SYSTEM —> FSTS
!
! —> DRIVERS
!
! —> SYSTEM.SETUP
!
! —> DESK.ACCS
!
! —> TOOLS
!
! —> CDEVS
!
! —> FONTS
!
! —> ICONS
! —> APPLTALK

Finder

This is an application which uses the mouse to 'pull-down' menus and open 'windows' through which you can perform various 'housekeeping' functions and launch other applications.

A feature of the Finder is the top menu bar. This feature is used in many Apple applications. At the left-hand side you will see an Apple symbol. This Apple may be used to access New Desk Accessories (NDA).

NEW DESK ACCESSORY (NDA)

An NDA is an application that may be accessed without disrupting a program you are using which has a pull-down menu bar.

To add an NDA to your system, copy the file (identified by the filetype NDA) to your system into the subdirectory called Desk.Accs (see Classic Desk Accessory). An NDA will not be accessible until you re-boot the machine. Access it by holding down the mouse button when on the Apple Symbol on the menu bar (see Finder) and pulling down until you highlight the NDA you want, and releasing the mouse button.

SHOW TEXTFILE v1.1

*A New Desk Accessory
Programmed by Guy T Rice
Public Domain*

When accessed one is presented with a scroll box which acknowledges the drive that you booted from and catalogs the disk. You may choose a file here or read in a file from another connected drive.

ASCII TEXT files are printed to the screen. It is not immediately obvious that to scroll the file up the screen is achieved by positioning the mouse arrow at the bottom of the screen and clicking. To scroll up move the mouse arrow to the top of the screen and click.

The top menu bar remains accessible but you cannot select another text file to view until you have put away the current file by clicking on the 'finder' style square box in the top left hand corner.

AppleWorks files are loaded as ASCII text file (that is, without the invisible characters that is the hallmark of AppleWorks files when viewed with programs such as Copy II +).

Any tabs in the file will be displayed as inverse query signs.

BEWARE - As the file is loaded in you get a screen message that says 'Please wait'. If you access a file which is empty the message will remain on the screen and you are left wondering whether the program has crashed. This is because there is nothing to overwrite the message.

If you access a large file and scroll through it to the end - and want to return to the beginning you will probably find it easy to close the file and re-

open it - because the click arrow routine takes you back one screen at a time and can be very painful.

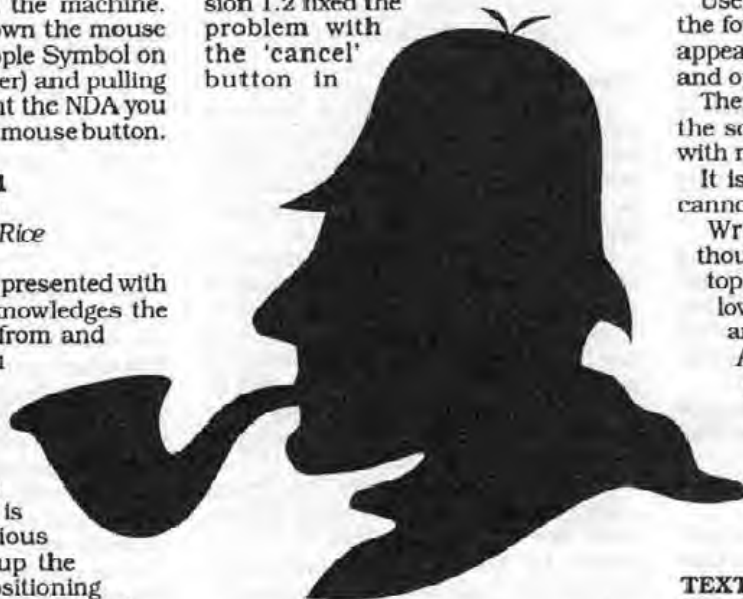
A feature similar to that in AppleWorks which allows you to travel through the file (open-apple 1 to 9) would be helpful.

When you are in a position to load the file you are given no information to tell you what type of file it is or creation date or length.

You cannot access AppleWorks GS files. ASCII and AppleWorks are accessible as are some text files designed to contain information for program use (for example Crystal Quest Sound files).

I have versions 1.1, 1.2 and 2.0 but have only tried Version 1.1 for the purpose of this review. A text file which describes the developmental history of the NDA has the following comments to make.

It seems that version 1.2 fixed the problem with the 'cancel' button in



the Standard File Dialog Box (I didn't spot the bug). However v 1.2 has a problem in scrolling (it 'misses' pages). Also there is a problem in accessing AppleWriter ASCII files as it truncates any lines over 80 columns.

Version 2, apparently, will not access AppleWorks files. It seems that it was a complete re-write which resulted in a faster program which consumed less memory.

So the message is - stick to version 1.1.

It is a sound program. A useful NDA. It will come in handy for 'Finder' users.

FILE PEEKER

NDA

Freeware

I came across this application on a bulletin board. It was called FileView. There was no documentation with it.

It claims that it will allow you to check the contents of ANY file and that unprintable characters will be shown as inverse query signs.

Unfortunately when I ran it to access ASCII files and AppleWorks APW files it

ardently persisted in claiming that the files were empty.

The movable text window with which you are presented will occupy half the screen and can be reduced in size (a la 'Finder') but cannot be opened up to fill the screen. It is therefore impossible to show 80 columns.

Am I missing something ???

WRITEIT!

New Desk Accessory

A shareware program written by C K Houn

To produce this section of this report I am using WriteIt!, a NDA which describes it self as a mini Word Processor.

It allows you to write notes or random thoughts when you are in an application which allows you to use pull-down menus to access the NDA. It copes with word wrap.

Useful keys appear to be - delete and the four arrows. Useful combinations appear to be - open-apple-up-arrow and open-apple-down-arrow.

There are some interesting results to the screen if you use the option key with most other keys. Why not try it!

It is a little disappointing that you cannot print to the printer.

WriteIt!'s place in this review, though, says he, getting back to the topic in hand, is that this NDA allows you to 'open' an ASCII text file and read it. It will not recognise AppleWorks APW files so at least you are not going to be faced with all those spurious characters.

It will however write the new Apple preferred TeachText files which preserve any font changes you may have made.

TEXT FILE HELPER version 2.01 by Floyd Zink Jr (1987)

Freeware

ProDOS 8 - will work on an 64k Apple or Apple IIgs

This is a small useful program which will allow you to be creative with files. It is a standalone application.

In Text File Helper you may perform the following operations.

- Q - Quit*
- C - Catalog*
- T - Type Files*
- A - Append Files*
- D - Delete Files*
- N - Rename files*
- S - Strip linefeeds*
- R - Remove Carriage Returns*

The program is a little clumsy (maybe there is a later version). You have to work out your own pathnames. I have tried ASCII, AppleWorks APW and Publish-It! files. Unprintable embedded commands are shown as inverse characters. AppleWorks files are shown without linefeeds or carriage returns - and is confusing. The A, S, R functions save your original files as xxxx.Orig

and then give you the new files as TXT files.

'Append' allows you to combine TXT files together. This is not worth doing with APW files as you introduce all the inverse characters and AppleWorks will allow you to do it.

'Strip Linefeeds' and 'Remove Carriage Returns' are useful when you download or upload to Bulletin Boards.

COPY II PLUS

This is a suite of utilities that has been with us since the early Apple II days but in its many revisions continues to handle DOS 3.3 and ProDOS. Version 8.4 is the latest recommended version. There is a version 9 but on the Apple IIs it does give problems when handling GS/OS files.

One of its utilities is the option to VIEW FILES. Selecting this option will allow you to 'VIEW TEXT'. Any file can then be displayed to the screen as text. Should it be an ASCII text file you will get a 40 column display (which frankly, these days, I find difficult to read). You scroll through the text but cannot scroll up. If you wish to re-read the file you have to start the process again. Should the file be an AppleWorks APW file you will be presented with an almost indecipherable text because of all the invisible formatting codes that are usually to be found.

If you have set your printer slot in the main menu you get the option to print directly to your printer - which again is 40 columns.

Copy II plus is a must for every Apple user and the 'VIEW FILES' option comes in handy from time to time despite its limitations.

CLASSIC DESK ACCESSORY TYPEIT

Glen Bredon, author of ProSel, wrote this CDA. It is clearly an early example of his work. This application has no version number and I am unaware whether it had a follower. It is dated 1987.

Copy it to the Desk.Accs subdirectory (see Glossary for details). Then re-boot the computer to use it. Access the CDA by pressing the 'open-apple-control-escape' routine.

You are asked to type in the pathname of the text file (boring!) which clearly you must know before being able to continue. ASCII files are shown O.K. AppleWorks APW files are displayed with the usual confusion of otherwise transparent characters.

One may print to the screen or to a printer.

NEW DESK ACCESSORY

Text File Reader

This NDA is called 'Reader' on the disk I have. Initially I had some difficulty in getting it to work until it dawned on me that I was trying to read a file in a sub/sub/sub/subdirectory. I tried reading my AppleWorks Custom Dictionary which is an ASCII text file and

was not so deep in my system. It handled this perfectly.

Experiments with an AppleWorks APW in the root directory gave a strange result. The NDA could not find any reference to it - so I could not read it. Does anyone out there have any explanations?

On running the NDA one is presented with a standard scrolling dialog box (which will fill the whole screen) and which gave complete control over reading ASCII text files.

It fitted beautifully into the 'Finder' environment.

To produce this section of this report I am using Writell, a NDA which describes itself as a mini Word Processor.

It allows you to write notes or random thoughts when you are in an application which allows you to use pull-down menus to access the NDA. It

copies with word wrap.

Useful keys appear to be - delete and the four arrows. Useful combinations appear to be - open-apple-up-arrow and open-apple-down-arrow.

There are some interesting results to the screen if you use the option key with most other keys. Why not try it! You will get all those foreign characters you only dreamed of!

It is a little disappointing that you cannot print to the printer.

Writell's place in this review, though, says he, getting back to the topic in hand, is that this NDA allows you to 'open' an ASCII text file and read it. It will not recognise AppleWorks APW files so at least you are not going to be faced with all those spurious characters.

William Watson

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Standard external drive for Mac or //e w/UDC (not daisychain)

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As above but fully daisychainable

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As Analog Edge, but; four switchable fire buttons including one for the "trigger" finger. Variable auto-fire, & suction cups on the base.

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ErgoStick Joystick (Suncom) £29.99

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Sonic Blaster £113.85*

Stereo digitizer card for record, edit, play, and amplify. Works with most programs offering stereo sound.

TransWarp £119.00*

The original 3.6MHz accelerator board for the II+ or //e. This is the lowest-ever advertised UK price for a //e accelerator.

Sensible Grammar £73.95

The only grammar checker for the Apple II. Works with most ProDOS WP like AppleWorks, AppleWriter, Format-80, pfs:Write, Zardax etc.

StickyBear Math/ABC ca.£29.95

StickyBear Typing/SpellGrabber ca.£39.95*

Apple IIGS System Software 5.0.2 £49.95*

Updated system disks plus manual.

AppleWorks v3 Upgrade £86.25*

Remember, this now includes a spell-checker. Send original Apple Computer Inc. disks with your cheque, - specify 5.25" or 3.5". Note; we will allow £5 off this price if you also include the old manuals.

Disk Drive 20/19 Adaptor £14.95*

Lets you connect 20-pin drives to IIGS, //c and Laser-128 drive ports, as well as to UDC, UniDisk 5.25, and DuoDisk interface cards.

Banner Roll £8.89

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3.5" disk of 170 graphics for Print Shop GS, LLL, or Publish-It! 3. Mostly with a holiday flavour to bring that festive flair to your creations. Many cartoon characters.

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AD TWO



Surge Suppressors: Worse Than Useless?

Andy Baird the Editor of the Princeton Macintosh Users' Group, Princeton, New Jersey tells a sorry tale

ZZZZZAAAAPPP!

Jolted out of my early-morning sleep by the deafening buzz of an electrical arc, I knew at once something was badly wrong. I lunged toward the sound, which came from beneath my computer desk, taking in at a glance the ominous blue-white glare from my surge suppressor, and the cloud of black soot staining the wall behind it. I ripped the Mac's plug from the outlet as the arc died and an evil smell filled the room.

After my heart had stopped pounding, I examined the remains of my surge suppressor. Looking at the charred interior of the case, I shuddered. If it had been made of plastic instead of steel, there probably would have been a fire. The MOVs (Metal Oxide Varistors) had been literally blown apart by the force of the surge; then, like a welder's rod, had arced across the bare wire leads.

I thanked my lucky stars that the MOVs had done their job and saved my Mac, while wondering whether there wasn't a better way to protect equipment - a way that didn't involve an explosive failure of the components that did the protecting.

I thought about the time, a couple of years back, when my Hayes Smartmodem had died during a thunderstorm, along with a couple of chips on my computer's motherboard. I had surge protection on the computer, but none on the telephone line. When lightning struck nearby, a spike came up the phone line, fried the modem, then continued up the serial cable to kill the line driver chips in my computer. After that experience, I added a surge suppressor on my phone line, so I was completely protected.

Or so I thought at the time

Now I know I was wrong. In fact, I now realise that the modem was probably killed by my surge suppressor. The MOVs which were supposed to protect my computer had done their job by shunting an incoming power-line surge onto the ground conductor - the same ground used by the modem as a signal ground reference. The result was a few thousand volts across the modem's inputs - and a dead modem.

Everything you know is wrong

I want to make three main points in this article. First, the surge suppressor you own, if it's more than a year old, is probably not protecting your equipment, because its MOVs have degraded to the point of uselessness - and there's no practical way you can test this. Second, even if it's brand new, or uses expensive TransZorb devices instead of MOVs, it is designed to dump surge energy onto the ground conductor used as a reference by your modem, network connection or other serial device, thus endangering your peripherals or other networked computers even if it protects your own computer.

Third, there is a new device which will protect your equipment over the long term - ten to twenty years without endangering it.

Before I tackle those three points - and try to convince you that the conventional wisdom about surge suppressors is wrong - let me tell you where this information comes from.

Lightning strikes in the capitol

The National Institute of Standards and Technology, in Washington, DC, has a section devoted to the study of power-line surges. The head of the group, Francois Martzloff, has been studying surges and other transient electrical phenomena for many years, resulting in ANSI/IEEE standards (C632.41-1980, if you're interested) defining commonly-encountered spikes and surges. A recent experiment, in which surges were artificially induced in the power wiring of an industrial building, yielded an unexpected result: surge-suppressor-protected computers were undamaged, but serial printers connected to them were damaged by surges on the data input lines - not the power line.

Where had these surges come from? Martzloff and his colleagues finally concluded that the data-line spikes which had damaged the printers had been created when the computers' surge suppressors shunted the excess electrical energy to the common ground conductor. The printers had been killed by the surge suppressors!

Interestingly, the NIST team was not the first to arrive at this conclusion. A

small New Jersey company, Zero Surge Inc., had been founded not long before by two engineers who set out to build a power conditioning device which would not dump excess energy to ground. We'll talk more about the Zero Surge device later. . . but now let's consider my three major points.

The mortality of MOVs

A look at GE's "MOV Design Manual" reveals several interesting facts. First, MOVs don't begin to respond to a voltage spike until 10-40 nanoseconds. That may sound fast, but the typical spike described in the IEEE standard has a rise time of just 5 nanoseconds. That means an MOV can't react fast enough to stop the most common electrical spikes. . . spikes the IEEE standard says can be expected many times a week in an average building!

Second, MOVs wear out. Every little jolt shortens the lifetime of an MOV, until finally it fails to provide any protection. Those little jolts include the several times-a-week spikes described in the IEEE standard. A recent article in the industry journal LAN Times (May 1990) says: "If your surge protectors have been in use for a while (six months is a reasonable time), the MOVs may be incapable of proper performance. Moreover, as the [MOV] ages, its clamping voltage decreases and it may begin a process called thermal runaway, which has resulted in fire." (Remember, I spent a long time scrubbing the soot off my walls after my surge suppressors burned up!)

A dead MOV - more precisely, one which has deteriorated to the point where it offers no protection - can only be detected with expensive, sophisticated test gear. That ten-cent LED which glows so reassuringly on your present surge suppressor may make a good night light, but it tells little or nothing about whether your MOVs are really doing their job, or have gotten tired and given up. I've been shown several commercial surge suppressors (a Kensington MasterPiece, among others) which appeared fully functional, but provided no surge protection whatsoever!

In short, MOVs provide inadequate protection; they wear out in the course of normal use, and they fail without warning, possibly posing a fire hazard.

What about TransZorbs?

I've always figured I was extra safe, because my Mac was plugged into an expensive power strip using TransZorbs instead of MOVs. TransZorbs (avalanche diodes) are semiconductor devices which respond faster than MOVs, and don't degrade with time. However, I've recently discovered that they have another problem: when a really big surge hits, they fail "open", so they can't divert the surge voltage, just when they're needed most!

But that's minor. The real problem is this: just about all presently available

surge suppressors, whether they use MOVs or TransZorbs, are wired to divert, or shunt, energy to ground. As the NIST researchers found, this almost guarantees contamination of data lines, resulting in garbled data at best, and fried equipment at worst. The same design flaw which cooked my Hayes modem and those printers in Washington is built into almost every surge suppressor made, from the cheapest to the most expensive. The LAN Times sums it up this way "Networks should only employ surge protectors that do not shunt surges to ground. If [existing] power conditioning devices contaminate the reference ground by introducing surges, it may be wise to remove such devices from a network or to replace them with something better."

Some people may think they're protected by the use of UPS (uninterruptible power supply) equipment, which by definition is a 100% battery-fed system. But not only are UPS's quite expensive, their inputs are protected by the same fifteen-cent MOVs. (The single exception, Abacus Controls, licenses its technology from Zero Surge, the company mentioned earlier.)

A singular solution

So how can you protect your expensive computer equipment? The LAN Times has this to say: "The ideal surge protector would be a circuit that presents a high impedance to the surge and a low impedance to the [normal] power wave, while protecting the integrity of the ground circuit. It should also contain no degrading components like MOVs." Such devices exist; they are made by Zero Surge, Inc.

If I tell you that the Zero Surge units appear to be the only surge suppressors on the market which work properly, you'll have a right to be skeptical. After all, the power conditioning business is full of snake oil salesmen, each claiming that only his product is worth buying.

Well, I don't blame you. I was certainly skeptical at first. But after reading articles in LAN Times, PC Week and Power Quality magazines and talking with electrical engineers as well as the president of Zero Surge, I believe the Zero Surge protectors are the only ones which 1) will adequately protect equipment and 2) won't contaminate data lines by dumping surges onto the ground circuit.

The Zero Surge unit differs in four fundamental ways from ordinary surge protectors:

1. It's a series circuit with zero response time. It intercepts all surges, including the common 5 nanosecond surges which are too fast for MOVs to divert.

2. It contains no MOVs or other sacrificial or degrading parts, and no components are overstressed by surges of unlimited current up to 6000 volts

(the IEEE standard). Its service life is equal to the shelf life of its components, which is why Zero Surge warrants its products for 10 years, and thereafter offers to upgrade any unit to new condition at any time for 20% of whatever the unit then sells for.

3. Critical for networks and modems (BBS and LAN users take note), Zero Surge does not use ground as a surge sink, but instead stores the surge energy temporarily, then slowly releases it to the neutral line. This preserves the integrity of the ground for its role as voltage reference by all dataline interconnections.

4. Zero Surge takes the sharp leading edges off surges and noise, eliminating their ability to couple into computer circuitry. Zero Surge makes 2 sizes of surge interceptors, a 7.5 Amp model (list \$149), which is right for

those of us who don't have laserprinters, and a 15 Amp model (list \$199) for those who do. The 15 Amp unit is offered at a special price of \$169 to user group members. You won't be surprised to hear that I bought one!

Zero Surge president Wendell Laidley is a straightforward, soft-spoken man who emphasises his desire to answer any and all questions about his product. His phone number is 201/766-4220 (fax number: 201-766-4144). Don't hesitate to call him.

MUG NEWS SERVICE, 1990

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MORE NEW GS SOFTWARE

Animation GS-67 £4.50*

Allows viewing of animation. Can even speed up or slow down the play rate of animation.

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Fight your way across an open plain and make it safely to the mountains. Great arcade game with sound, music, and animation.

MIDI Synth/SynthLAB v1.0B3 £39.95

Apple's own synthesizer, sequencer, and MIDI driver integrated into one tool. Uses only 25-30% of CPU overhead while running in the background. Provides powerful tools for integrating sound into applications. Should be of interest to anyone wanting to experience the full capability of the IIGS' sound circuitry for games, music etc...

Orbzone GS-151 £4.50*

Stunning shareware adaptation of Asteroids for the IIGS. Great graphics, sound, and non-stop action. Also includes a version of Othello.

Print Shop Companion GS £39.95*

Prints envelopes, postcards, labels, posters, and daily, weekly, monthly, & yearly calendars. Also contains editors for graphics, fonts, pixel patterns, borders, full panel graphics, and custom backgrounds. Plus other useful features.

Design your own home GS:

Architecture/Landscapes/Interiors ca.£79.95*

Space Ace £39.95*

1Mb IIGS edition of the popular arcade game. Save the earth in this 9-disk set!

2088: Cryllan Mission - 2nd Scenario £39.95

Once again, the USS Houston's crew go missing on Crylla. Completely new 1.25Mb IIGS game (no need to have run the 1st scenario).

SenseLess Violence GS-149 £4.50*

Shareware game in which you must retrieve all five baby bottles in as little time as possible while avoiding the traffic. Also includes: As the link turns, Lunar Lander, Chips & Dips.

Flight Simulator GS-117 £4.50*

Bring the plane back in one piece! Also: Galaxy Pinball, Copy Killers, Fox & Geese, plus other games.

Diversi-Copy v3.2 £4.00*

\$30.00 shareware utility system. Copies unprotected 3.5" or 5.25" disks as fast as your hardware will allow. Supports most RAMcards including Saturn,

Apple, AE, IIGS for single read/pass copying on single drive systems (providing you have enough RAM). The best system available for duplicating 5.25" disks, has a brilliant mass production facility which loads whole disks to RAM, then copies to two drives in turn, which considerably speeds up the duplication process. Also formats ProDOS, DOS 3.3, Pascal & CP/M disks. Includes bonus "Dogfight" game. Full printable instructions provided on the disk. £4.50* for 3.5" disk.

ProSEL-8/16 Combo £80.00*

Glen Bredon's ace program selectors for both IIGS & //ec.

CDAs, NDAs, & TSFs GS-20 £4.50*

A wide variety of classic DeskTop Accessories (CDA), New DeskTop Accessories (NDA), and Temporary Startup Files (TSF).

ICON & Finder GS-18 £4.50*

Contains TIE v1.2 (The Icon Editor), FINDER.FIX, DESKTOP.FIX2 and a multitude of new icons for use with The Finder. TIE is used to create or edit Icon files used by the program Finder (v1.0). FINDER.FIX allows you to change the parent pathname of icons so that the Finder will look where you want it to for your favourite applications. DESKTOP.FIX2 is a utility to change the colour of the Finder's desktop. There is documentation for the major programs and some good technical information about icons on this disk.

IIGS Startup Files GS-09 £4.50*

Contains programs that are run when ProDOS-16 is loaded. Documentation is provided on the disk.

PyWare Music Writer SE £295.00*

For //e, //c, or IIGS (specify). Designed for the serious music hobbyist or music teacher who is interested in part writing or producing medium-sized scores. It is limited to 6 staves and can be printed in score format.

PyWare Music Writer Pro £449.95*

For //e, //c, or IIGS (specify). Designed for the professional arranger or composer who is interested in full scores. It allows up to 32 staves and contains many automatic features for easy input & editing. The most flexible and professional notation and composing program available on the market.

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AD THREE



AppleLink Tidbits

Apple IIGS: Don't Use DuoDisk on SmartPort TOPIC

I am experiencing a problem using DuoDisk with the Apple IIGS.

Equipment

"Blockbuster" Apple IIGS with Rev. 3.0 ROM, DuoDisk, Profile or SCSI HDA in slot 7 (optional)

Reproducing the Problem

Plug the DuoDisk into the disk port on the Apple IIGS main logic board. Install the Profile in slot 7, and set the Control Panel to "your card." Leave both DuoDisk drives empty and power on the system. Set startup to "Scan."

The DuoDisk LED for drive #1 should turn on, but the system will not start. Why did the Apple IIGS skip the Profile in slot 7? Now, power down the Apple IIGS and put a non-write-protected disk in the DuoDisk drive. It still doesn't start.

Power down the Apple IIGS and place a write-protected disk in the drive. Power on the system. The system starts up as expected, following the "Control Panel".

If the system appears to be "hung" following any of the above steps, momentarily triggering the write-protect switch by inserting anything into the drive allows the system to start up.

There appears to be a compatibility problem with the new Apple IIGS main logic board and the DuoDisk. Performing the "DuoDisk/Apple IIGS fix" that is posted on AppleLink has no effect since the problem appears to be hardware (firmware) based.

I'm stumped. What's going on?

DISCUSSION

Tech Comm was able to reproduce this problem exactly as you describe.

There IS a compatibility problem with the DuoDisk and the Rev 3 Apple IIGS main logic board.

A check with Engineering provided us with the only workaround. Do NOT use the DuoDisk on the SmartPort. There is some code in the ROM that does not handle the interface to a DuoDisk properly. As of February, 1990, the only workaround is to use the DuoDisk on an interface card.

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Apple IIGS: DOS 3.3 and Hard Drives TOPIC

Is it possible to partition the hard drive of a Apple IIGS, so one partition contains DOS 3.3 and applications and the other contains GS/OS? I tried it, and now the IIGS can't recognize DOS 3.3 floppy disks.

DISCUSSION

DOS 3.3 was created when hard disk drives were only a dream for microcomputers. Thus, DOS 3.3 and previous versions understand only the 140K 5.25-inch disks. DOS 3.3 does not understand the 3.5-inch disk and hard-disk environments. When hard disks did appear for the Apple II family and DOS 3.3 was still the operating system of choice, individual hard-drive manufacturers devised independent schemes for dividing their products into multiple 140K volumes so DOS 3.3 could work with the hard drives. ProDOS was created to overcome the limits that DOS 3.3 imposed on storage volumes.

GS/OS would require a File System Translator (FST) to recognize the 5.25-inch disks of the DOS 3.3 operating system. However, the FST would be of no assistance in providing DOS 3.3 partitions on a hard disk, because the lack of hard-disk support is a limitation of DOS 3.3 itself, not the FST. To use DOS 3.3 applications on an Apple IIGS requires restarting from a 5.25-inch DOS 3.3 disk.

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Apple IIGS: Making Disk II Work in Slot 1, 2, or 3

Some Apple IIGS users have discovered that Disk II drives do not work properly when the controller card is installed in slot 1, 2, or 3. On startup in this configuration you will get an "UNABLE TO LOAD ProDOS" error message.

The reason is that there is some special hardware that was designed into the Apple IIGS just to take care of handling Disk II access. The hardware recognizes Disk IIs, and when an access is attempted, the system switches into slow mode on recognition of the Motor Start signal.

This causes the "UNABLE TO LOAD ProDOS" error, since the system cannot switch speeds quickly enough to begin reading the beginning of the boot blocks on the disk. This is one of the time-critical functions of ProDOS, and it does not function correctly. The problem occurs only when using Disk IIs and only when in the lower numbered slot 1, 2, or 3. This follows the Pascal convention of no bootable devices lower than slot 4.

Here is a workaround:

If the system is running in Slow mode when the access to the Disk II is performed, the boot blocks are read correctly, and the system starts up. The same is true for cataloging the disks.

If you can run your program in slow mode, then you can use the Disk IIs in slot 1, 2, or 3. If not, then you must install the Disk II in slot 4, 5, 6, or 7.

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Color Printers for the Apple IIGS TOPIC

Are there any third-party vendors that make a color printer for the Apple IIGS?

I know the ImageWriter II prints color, and most Apple IIGS software talks PostScript.

I am interested in the HP PaintJet and other HP color printers, but I wonder if they can do the job: since they are not QuickDraw-compatible, most Apple IIGS software probably won't work.

DISCUSSION

With the advent of GS/OS for the Apple IIGS, printer communications follow a Macintosh-style architecture; both Macintosh OS and GS/OS printing are driver-based.

The print driver technique allows a wide variety of printers to be attached to the Apple IIGS -- once the driver is written. This allows Apple IIGS-specific applications to talk with the Print Manager. In turn, the Print Manager communicates with the Graphic Control Panel-selected print driver, which is installed in the Apple IIGS. Thus, the communication to printers relies on the availability of print drivers for the Apple IIGS, not on the specific application.

As shipped from Apple, GS/OS 5.0 provides direct connection drivers for the ImageWriter, ImageWriter LQ, and the Epson printers. For LocalTalk printers, LaserWriter, AppleTalk ImageWriter, and AppleTalk ImageWriter LQ drivers are included. Only the ImageWriter drivers provide color support; the Epson driver does not provide color capabilities.

Hewlett-Packard does not support the Apple IIGS-to-PaintJet (or other HP printers) connection. Apple Tech Comm does not know of any third-party Apple IIGS print drivers that allow the selection of the PaintJet from the GS/OS Graphic Control Panel.

Orange Micro markets a product called Grappler C/Mac/GS. This is a serial-to-parallel converter. The Grappler device also provides ImageWriter II emulation for Epson, Okidata, Panasonic, and other Epson-compatible parallel printers. The Grappler C/Mac/GS can print in color on parallel color printers. We have been unable to define which of the following printers are color; however, Orange Micro has provided this list of Grappler C/Mac/GS-compatible printers:

- Epson : EX, FX, JX, RX, LX series; and the MX series with Grafltrax - Star : SD, SR, SG series; and Gemini 10X, NX-10 (in Epson FX mode) - Okidata : 190, 290 series - C.Itoh : C310XPR (Epson FX mode), ProWriter Jr. - Panasonic: 1080, 1090 series - Citizen : MSP-10 (Epson FX mode) - Printers fully compatible with any listed above.

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All files retrieved from AppleLink UK Edition



Operation AppleStorm

□ The following message was first posted on CompuServe and then sent on to us on TABBS.

What is Operation Apple Storm?

It is a group of Apple II users getting together to put out an Apple II ad. Its purpose is to:

1. Make everyone feel good about their Apple II computer.
2. Show that the Apple IIGS can stand up on its own, given the chance.
3. Give Apple, Inc. a big red face.

The cost of a two page ad (regular rate) is roughly about \$10,000 — just for the ad space (ouch). Then add about \$1500 for actual color separation, photography and such. I'm going to see if there is anyway to get some kind of deal from inCider (considering their recent failings in supporting the Apple II), but it is still going to be a lot of money.

Despite the large amount of money — it can still be done.

It would take about \$25 from 500 people to cover most of the cost. If you guys are still up for it — I'll begin compiling a list of names and addresses of people who would truly pledge up to \$25. If we get more than 500 people, the cost per person starts to come down. Then, we'd need to collect the money and come up with an ad. So that's what it will take to get Operation Apple Storm started. If you folks want to do it, I will continue.

Please, don't pledge anything unless you are really willing to give when the time comes — I'm not ready to get into the Accounts Receivable business. :) If you are interested — please send me Email with your Name, Address, and Online Service/Name. The response on GEnie has been great. I think I've got over 30 pledges in less than 2 days. Hell Hath no fury like an Apple II owner scorned [by Apple]!

Mark Munz Operation Apple Storm

□ This just came on CompuServe and is getting tremendous response from the Apple II users at MAUG. I have pledged my \$25. Apple User Group of Sweden has promised \$100.

If you would like to pledge, send your name and address to me and I'll forward them to Mark Munz.

Andreas Wennborg

□ Andreas can be contacted on TABBS (0225-743797). If you do not have a modem please reply to the PO Box in Liverpool, marking your envelopes AppleStorm. We will do the rest. Please do not send money at this stage, but make sure you include your full name and address where you can be contacted.

I have pledged my \$25 and Apple2000 has also pledged \$100 to this worthy cause.

Ewen Wannop

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Model	Size	Cap	Type	Speed	Total Price
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ST1096N 3.5"	H-Height	83Mb	SCSI	20mS	321.62
ST277N 5.25"	H-Height	65Mb	SCSI	28mS	270.88
ST296N 5.25"	H-Height	84Mb	SCSI	28mS	291.57

The above prices are available only while stocks last and are strictly cash with order. The prices you see are the prices you pay, there is nothing else to add - even delivery is included in the price.

We can also supply Seagate RLL, MFM, IDE and ESDI hard disks for IBM compatible computers.

Please allow 14 days for delivery.

NEW PRODUCTS COMING!!!!!!

We are currently negotiating with an American software company to supply WordPerfect IIGS and TimeWorks Version 3.0. These are two of the best products for the Apple II in their respective fields and we can guarantee excellent prices that are fully inclusive of all extras (including delivery). If you are interested, call me now so that I can measure the potential for such a tie-up.

If the response is good, I'll consider making deals for other software products.

TO ORDER

If you would like to order a hard disk, make your cheque payable to Derek Hughes and send it with a written order to:

Seagate Software Developments, 86 Colinmander Gardens
Ormskirk, Lancashire, L39 4TF

You can call us on (0695) 573870 After 7pm

The Nibbler Speaks



□ My friends at Bidmuthin tell me that they still have LCD screens for the //c in stock. That is if they were not all snapped up at the recent Apple2000 workshop. You will have a chance to see them in action at the 'Meet Roger Wagner' day on the 27th of April. See the bottom of this page for more details.

□ Cirtech have recently dropped the price of some of their hard drives. Ring Bidmuthin for details of their current prices.

You will see on the previous page that Derek Hughes of Seagate can supply bare Seagate drives. Those of you having an ailing hard drive, or those wishing to upgrade the capacity of your drive, should contact Derek. In most cases it is a very simple job to replace any unit with a Seagate one and then to format it for use. I recently upgraded a second Apple 20SC to a 62SC in around 30 minutes flat!

□ You will also see on the previous page the details of AppleStorm.

Please support this worthy project. It is only by doing things such as this that Apple might actually wake up and realise that there are users out there who really care and want the Apple II to continue in parallel with the Mac.

□ Apple have stunned us yet again with the pricing on the new printers. The StyleWriter looks like a suitable printer to directly replace aging ImageWriters for home use. The print quality is excellent. It will not network, but that would not matter for most home uses. It uses TrueType fonts and therefore is not PostScript, but again this will not matter for those of us with Mac's when we get System 7.0. I presume and hope that a driver for the IIGs will follow shortly, and that the StyleWriter will work in draft mode if connected directly to a //e or II+.

It uses replaceable ink cartridges which costs around £13 a time. These will give 500 copies on average. This works out at the same cost as a LaserWriter and is around 2.5 pence a print!

The only blot on the horizon is a report from an anonymous dealer who was told by Apple at the sneak preview that it would only print around 5000 copies before wearing out! If this is so it is an expensive printer to throw away after only that many copies. What happens if it wears out during the guarantee period? Come on Apple, you do not

state the printer duty cycle in the specs, come clean and tell us what it can do!

□ Talking of LaserWriter print costs I have been trying to cut our massive toner bill at college by recharging our old cartridges rather than throwing away an expensive piece of plastic and selenium. In the past I have had mixed results from recharges, but recently have been using a local firm which turns out to be part of a country-wide organisation. You will see the advertisement for Laser Recharge Services in the back part of this magazine.

Laser Recharge disassemble, clean and refill the cartridge with specially formulated toner designed to give the rich, black solids so vital to Desk Top Publishing - the application that so many LaserWriters are used for. The results certainly lived up to my expectations. In fact, it was difficult to fault the cartridge - although I am not sure that your local Apple dealer supplying new cartridges would agree!

They tell me that the history of recharging is a classic David and Goliath story - reminiscent of the early days of Apple itself. When Canon (whose technology the LaserWriter uses) designed the cartridge they had to effectively over-engineer it to take account of the user's differing requirements. This resulted in Canon being the

'Meet Roger Wagner'

Apple2000, in collaboration with Bidmuthin Technologies, are proud to announce that Roger Wagner will be presenting a demonstration on the IIGs with HyperStudio Interactive Multi-Media on the 27th of April at Bidmuthin Technologies, Pinner

Roger Wagner Publishing Inc. publishes HyperStudio, Merlin 16, SoftSwitch, Graphic Exchange and MacroMate

N.B. — Invitation only — 'first come, first served'
Contact Huw Price at Bidmuthin (081-868-4400)

victim of its own success as a number of resourceful individuals in the United States took advantage of the opportunity. However, in the early days in the mid-1980's were plagued by quality and reliability problems as rechargers learned their craft. This situation was eventually remedied as improved toners and replacement parts (including the key element - the OPC drum) became available. What was originally a cottage industry has now developed into a mature and respected business.

Recharging offers three major benefits to the LaserWriter user: substantial cost savings which can mean paying less than half the price of a new cartridge. Improved print quality. Caring for the environment by not throwing away costly and damaging waste.

Laser Recharge is the only organisation in this country offering a national recharging service via a network of locally-based dealers. For more information and details of your nearest dealer, contact Peter Gamble on 01793-650607.

□ Apple Inc. in their infinite wisdom have launched in the States an Apple System Software Update Program. For \$160 you will receive all system and HyperCard updates for a period of one year. You will also receive a full copy of HyperCard 2.0. The package comes with a "Right-to-Copy" licences for all computers on one site.

Of course most of you will receive your updates by simply taking along some blank disk to your local dealer. Others will download from CompuServe. Despite repeated requests, Apple will not give Apple2000 the right to distribute system software to members. In distributing Apple II System software to our members, we are simply filling a need that Apple UK will not address. They have stopped all support for the II series as you will all know by now.

If you do wish to subscribe to the scheme, contact Patty Tulloch, Apple Computer Inc. on 0101-408-974-5449

□ Going back to the question of hard disks again. Ewen tells me an extraordinary story.

With the libraries on TABBS having now filled the two disk drives, Ewen wanted to expand the stor-

age on TABBS from its present 90mb to at least 200mb in total. This seemed to be a simple task. Bare drives do not cost much these days, and knowing how easy it would be to add another drive on to the SCSI chain of either a Mac or an Apple II, Ewen decided to see what he could do with the TABBS PC clone.

First thoughts were to just add a SCSI card and so be able to use any Apple SCSI drive that came to hand. Ewen looked first at the Seagate SCSI card which costs around £20. After trying it out he discovered that this would only see Seagate drives and nothing else. He next tried a Future Domain SCSI card.

This is a much more expensive card and will see any SCSI drive. Drives it will see, but not DOS 4.0! Reformatting TABBS to DOS 3.3 showed the drive but nothing worked properly. It was at this point that Ewen discovered a fundamental fact about PC XT's. They will only see two physical devices. As there were already two drives on TABBS, the third just would not work at all.

TABBS is now reformatted to DOS 4.0, and all Ewen can do for the moment is delete old software to make room for the new material. Now if someone kindly donated a PC AT clone with at least 200 mb of storage **The Nibbler**

MORE NEW GS SOFTWARE

PyWare MIDI Translator £79.00*

Even though Music Writer has the ability to input MIDI from a synthesizer, some musicians prefer to use a sequencer program to enter and edit their music on the computer. This package converts a sequencer file into a notation file that can then be used in conjunction with the Music Writer.

For example, use Passport design's "MasterTracks Jr" program to create a sequencer file, then convert with PyWare MIDI Translator to a notation file to be enhanced and printed using Music Writer.

The combination of PyWare MIDI Translator & Music Writer and any 3rd-party sequencer allows the owner of an Apple IIGS to have a completely computerised music studio...

PyWare Music Writer Pro w/MIDI Translator £495.00*

PyWare Instrument Designer £129.00*

Create any instrument sound you wish. Alter sound waves, control sound attacks, sustains, decays, vibratos, pitch bends, and more... Create anything from acoustic instruments to your own original sounds.

Diversi-Cache £4.50*

\$35 shareware IIGS 3.5" disk drive speed-up software. Brings 3.5" drive performance up to RAMdisk speeds, without RAMdisk hassle. Just boot Diversi-Cache once at power-on, and watch your 3.5"-based programs run up to five times faster. Works with ProDOS, Pascal 1.3, and DOS 3.3.

Example boot times for Apple IIGS System Disk: without Diversi-Cache 41.0 secs; with Diversi-Cache 19.2 secs; reboot with Diversi-Cache 9.6 secs.

Speeds up 'dumb' 3.5 drives only, and needs 512K minimum. Includes FREE Diversi-Hack.

JumpStart £4.50*

Serious \$29.95 shareware alternative to Apple's Finder. Latest version handles GS/OS resource forks, can enable/disable CDAs/NDAs etc, and has the power to perform file maintenance operations on whole directories and sub-directories. GS/OS 5.0.2 compatible, and needs 512K.

NEW CLEARANCE PRICES

Publish-It! Font Pack 1 £14.95

Ten great new fonts for all versions of Publish-It!

Publish-It! Font Pack 2 £14.95

Ten more great new fonts for all versions of Publish-It!

NEW LITERATURE

Apple IIGS GS/OS Device Driver Reference £39.99

Describes how to write GS/OS device drivers, and how to make device-specific calls for existing drivers. This reference describes the GS/OS application interface to device drivers and all device-specific calls. It contains detailed descriptions of how to interact with the following drivers: SCSI, AppleDisk 3.5, UniDisk 3.5, AppleDisk 5.25, AppleTalk, & GS/OS-generated drivers. Approx.300pp.

Apple IIGS GS/OS Reference £29.99

Covers topics of interest to all GS application developers, including how to access disk files/volumes, use the GS/OS system loader, use the console driver for character-based screen & keyboard I/O, and handle interrupts in the GS/OS environment. It also explains how to use File System Translators, code modules that enable GS/OS to work with a variety of file systems including ProDOS, CD-ROM ISO-9660, and the file system used by the AppleShare file servers. Appendixes describe the Object Module Format (OMF), Apple extensions to the ISO-9660 standard, and the ProDOS-16 commands that GS/OS supports. 528pp.

ProSEL-8 Manual £9.95*

ProSEL-16 Manual £12.95*

NEW CLEARANCES

plusRAM Memory Card £99.95*

1Mb memory expansion card for II+ or IIe, (256K installed). Uses standard 256Kx1 DRAMs for expansion to full 1Mb, (£24.95 per 256K set). Includes software to run AppleWorks v1 on a II+, as well as enhancement software for versions 1/2 on the IIe. Automatically recognised for memory expansion by both v2/3. Includes DOS 3.3, CP/M, Pascal, and ProDOS RAMdisk software.

Apple IIGS Colour System £399.95*

256K base computer w/256K memory expansion card for total 512K, + RGB Colour Monitor w/cable. No mouse, no software, no manuals, and no drives at this price, (mouse £69.95, 3.5" 800K drive £149.95, 5.25"140K drive £49.95, GS/OS 5.0.x disk set £9.95).

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Wordfinder (ubiquitous Thesaurus)	£39.00

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Double Helix II (easier relational DB for starter programmers)	£350.00
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Filebase+Mac 2 (fast DB with great interface reads dBase)	£390.00
Omnis 3 Plus (ancient DB still works is cheap has many apps)	£175.00
Omnis 5 (now much faster and more Mac-like interface)	£495.00
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Database (flat file DA for quick convenient access to data)	£75.00
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KeyPlan (develop in outline then zap you are in critical path)	£235.00
MacProject II (powerful yet straightforward and flexible)	£315.00
MacSchedule (less heavyweight project scheduling)	£140.00
ACCOUNTING	
Access Classic Accounts (cashbook for home, small biz)	£175.00
Access Bookkeeper (complete trading accounts, upgradeable)	£445.00
MacMoney 3 UK (unbeatable home accounts and small biz)	£75.00
InvoiceIt UK (invoicing add on for MacMoney)	£65.00
Ritz (powerful and comprehensive accts for smaller business)	£340.00
Path (best complete accounts package for the non ace literate)	£345.00
PRESENTATION	
Cricket Presents (established presentation software)	£275.00
More III (extensive outline/lead/presentation capability)	£295.00
Persuasion 2.0 (high end presentations with outliner)	£365.00

£35.00

These are 80 nanosecond simms which will work in all current Macs including si and Classic.

SIMMS £35.00 per Mb.
Mac IIFX £180.00 for 4Mb.
Macintosh Portable Call.

MEMORY

PowerPoint (powerful intuitive easy presentations)	£189.00
Visual Business No.5 (incorporates graphics/presentations)	£165.00

GRAPHICS

PAINT & DRAW	
Canvas 2 (high end draw/paint package very good at layers)	£195.00
Desk Paint 3.0 (very good DA paint and draw package)	£125.00
MacDraw II (easy to use yet powerful draw package)	£275.00
MacPaint II (a classic in its time now includes colour)	£89.00
MacCheese (super cheap 32 bit colour paint tool)	£69.00
MasterColour (as above but in colour)	£115.00
Pixel Paint 2.0 (powerful colour paint program)	£235.00
Pixel Paint Professional (32 bit, the rest as above)	£375.00
SuperPaint (classic paint and draw software)	£130.00
Studio 1 (unique animating paint package)	£75.00
Studio 8 (full featured high end colour paint program)	£235.00
Studio 32 (32 bit version of the above, 5 mice MacUser)	£415.00
UltraPaint (knockout colour paint and draw program)	£140.00

DARKROOM & RETOUCHING	
ColourStudio (powerful retouching with good paint tools)	£795.00
Digital Darkroom (monochrome photo retouching)	£250.00
Image Studio (monochrome photo retouching)	£240.00
PhotoShop (current king of the photo retouching packages)	£895.00
Shapes (great special effects for ColorStudio)	£235.00

CAD & MODELLING	
Claris CAD 2.0 (straightforward powerful CAD)	£495.00
Dreams (good value CAD with many high end features)	£325.00
Generic CADD (popular US CADD package)	£325.00
MacRenderman (the best rendering tool for 3D images)	£545.00
MiniCad (maxi CAD performance)	£435.00
Model Shop (3D solid object modelling tool)	£355.00
Realize (new 3D solid object modelling tool)	£425.00
StrataVision 3D (24 bit photo realistic rendering)	£295.00
Swivel 3D (best tool at modelling objects with moving parts)	£295.00
Swivel 3D Pro (now supports 24 bit colour)	£355.00
Super 3D ver 2 (flexible colour 3D tool)	£325.00

POSTSCRIPT GRAPHICS	
Freehand (postscript drawing with text manipulation)	£315.00
Illustrator 3.0 (power PostScript with new text/layout ability)	£375.00
Streamline (best PostScript auto tracing tool)	call

DESKTOP PUBLISHING

DTP APPLICATIONS	
Comic Strip Factory (unique comic publishing tool)	£49.00
DesignStudio (high end DTP program)	£495.00
FrameMaker (pro publishing also on UNIX and NEXT)	£750.00
Multi Ad Creator (specialised DTP for laying out adverts)	£675.00
PageMaker 4.0 (one of the two heavy hitters)	£495.00
Personal Press (new baby brother for PageMaker)	£105.00
Publish It (powerful DTP package on a budget)	£250.00
Publish It Easy 2.0 (MacUser US best DTP winner)	£125.00
Quark Xpress 3.0 (the other of the two heavy hitters)	£495.00
Quark Xtras (goodies that add to Xpress' features)	£69.00
Ready, Set, Go 4.5 (full featured foreman of Design Studio)	£245.00
Ventura Publisher (finally migrates from DOS world)	£575.00

DTP AIDS & FONT MANIPULATION	
The Curator (collates/displays images/graphics on hard disk)	£390.00
DTP Advisor (information on the ins and outs of DTP)	£59.00
LebtaStudio (powerful headline font manipulation software)	£385.00
Pro Print (colour separates your PageMaker output)	£365.00
SuperGlue 2 (transfer, view and paste incompatible documents)	£85.00
TypeStyle (manipulates PostScript fonts into headline fonts)	£155.00
TypeAlign (draw a wiggly line and type text needs ATM)	£79.00

FONTS

TYPEFACES	
Adobe, Monotype Fonts	call
ATM Plus Pack (Adobe versions of rest of the Laser fonts)	£130.00
Adobe Type Manager (THE essential DTP program)	£59.00
Fraction Fonts (a Serif and San Serif font for any traction)	£45.00
Fluent Fonts (collection of bit mapped fonts)	£35.00
Fluent Laser Fonts (79 excellent PS fonts)	£125.00
Network Font (design your own Networks with Netfonts)	£75.00
Technical Fonts (science, electrical and Logifonts)	£95.00
World Class Fonts (great bitmap collections)	each £49.00
"The Originals", "The Stylisn", "The Giants" and "The Triples" great for non PostScript printers.	

FONT FOUNDRIES & UTILITIES	
Adobe Type Reunion (if you use Adobe fonts you need it)	£45.00
Art Importer (turn your PostScript art into a PostScript font)	£95.00
FontStudio (tab full featured font foundry from Letraset)	£450.00
Fontastic Plus 2 (classic bit map font foundry)	£65.00
Fontographer 3 (most widely used PostScript font foundry)	£295.00
Metamorphosis (converts Type 3 to 1 and creates outlines)	£95.00

MULTIMEDIA

HARDWARE	
ColourSpace II (8 bit NuBus PAL & RGB card)	£1795.00
ColourSpace FX (special effects in conjunction with above)	£2850.00
Moonraker (highly rated special effects board)	£1895.00
Computer Eyes (colour video capture with some FX)	£225.00
Neotech Image Grabber (manipulate video images)	£1150.00

VideoLogic DVA4000 Kit (new multimedia card & software)	£1895.00
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SOFTWARE	
FilmMaker (high end multimedia animation package)	£695.00
MacroMind Director (key multimedia tool)	£535.00
MediaMaker (edit it all into a story for recording onto video)	£475.00
MediaTricks (record, edit and playback screen sequences)	£185.00

CLIP ART

Publishers Resource (10MB set of UK origin PostScript art)	£150.00
Designers Resource (dozens of beautiful EPS backgrounds)	£75.00
MapArt EPSF (world maps in PostScript format)	£95.00
MapArt Paint (world maps in MacPaint format)	£45.00
PostScript Maps UK (Counties roads towns, London postal)	£95.00
PostScript Maps Europe (Cities rivers countries)	£95.00
Comic People (extra people and backgrounds for Comic Strip)	£29.00
WebPaint (best bitmap art available - 1000's of images)	each £49.00

PC COMPATIBILITY

Access PC (read PC files direct from floppy)	£79.00
DOS Mounter (same as above)	£69.00
DOS ReadA (DA that allows Mac to read and write to PC disks)	£29.00
LapLink Mac (powerful serial link translates between Mac/PC)	£95.00
MacLink Plus (popular Mac/PC link with 100's translators)	£135.00
MacLink Plus Translators (as above without the cables)	£125.00
Soft PC Mac OS (amazing 8086 CGA emulation for big Macs)	£250.00
Soft PC 286 with EGA (add on to Soft PC above)	£135.00
Tops Floppy (LocalTalk card for PC works with Tops DOS)	£110.00
Tops DOS 3.0 (PC version of Tops for Apple networks)	£125.00

COMMUNICATIONS

COMMS SOFTWARE	
MicroPhone 3.0 (acclaimed comms pack with user icons)	£210.00
Vicom Connect (famous UK package easy to use yet powerful)	£140.00
Vicom Multiterm (a bigger brother)	£225.00
Versaterm Pro (classic terminal emulation Mac to mainframe)	£180.00

COMMS HARDWARE	
TelePort Modem (a new price level for 2400 modem)	£150.00
TelePort Fax software (turns above into out only fax)	£45.00
NetSerial (share serial devices on network)	£250.00
NetBridge (bridge networks for extra speed etc)	£365.00
WS3000 Modem (old faithful 1200 BAUD modem)	£199.00
WS3000 V22 BIS (old faithful 2400 BAUD modem)	£295.00
Courier HST 9600 baud (fast modem at good price)	£595.00
Tricom Tornado 9600 (unique fast accelerates up to 40 000)	£895.00

NETWORK SOFTWARE	
Carbon Copy Twin Pack (remote access and file sharing)	£220.00
DataClub (new pretender to Tops crown starts as 3 pack)	from £169.00
In/Dut (maintain movements of staff in no organisation)	£210.00
Flash (another network file sharer - must be a flash flood)	£145.00
Microsoft Mail Server (classic powerful E-Mail)	£185.00
Microsoft Mail 10 User (works with above)	£395.00
QuickMail 2.2 10 User (powerful flexible extendable E-Mail)	£325.00
TopMail (Unlimited User (simpler budget E-Mail works a treat)	£95.00
Timbuktu 3.0 (remote access software for networks)	£95.00
Timbuktu Remote (remote access software for modems)	£120.00
TOPS 3.0 (classic file sharing software without dedicated Mac)	£145.00

HARDWARE

INPUT DEVICES	
Cordless Mouse (look Ma no tail...)	£89.00
Floppy Drive 800K (add-on external floppy)	£135.00
Floppy Drive 1.44Mb (add-on external floppy)	£235.00
Gravis MouseStick ADB (serious stick for serious gamesmen)	£95.00
Gravis MouseStick (for those of us who only have a Plus)	£80.00
Infra Red Mouse (very reliable, no moving parts)	£69.00
Kurta Graphics Tablet	from £295.00
Wacom Graphics Tablet (pressure sensitive)	from £550.00
MacRecorder II (classic cult sound digitiser with software)	£165.00
Voice Digitiser (as above without sound edit software)	£95.00
VoiceLink (new sound digitiser voice annotation, messaging)	£175.00
Voice Navigator II (most sophisticated voice recognition yet)	£495.00

MAC TO TAKE AWAY	
Agenda 32K (pocket size free form database)	£155.00
DIP Pocket PC (pocket size DOS PC with QWERTY WP spread)	£170.00
Outbound (turn your Plus or SE into a portable)	from £1495.00
Psion 400 (full size keyboard and screen GUI with mousepad)	£645.00
288 MacLink (classic in its time great Mac link WP spread)	£295.00

CHIPS 'n' BOARDS	
Accelerator Boards and Cache Cards	call
Ethernet Boards (thick thin wire or twisted pair versions)	from £295.00
1mb SIMMS	£35.00
FX, Portable, LaserWriter SIMMS	call
Mac Classic memory board	£75.00

ACCESSORIES

Cables (those not shown below)	call
SCSI cable	£15.00
SCSI extension 1m or 2m	£24.00
SCSI to SCSI 1m or 2m	£19.00
Modem cable	£10.00
ImageWriter cable	£7.00

MacLine Policy

- *Credit cards will not be charged until the order is shipped.
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- *Same day motorcycle delivery in London area is available.
- *Defective software is replaced immediately.
- *Refunds will only be given on unopened packages that are returned within 7 days of receipt.
- *Prices are correct at time of going to press.

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Apple Authorised Dealer

Ordering & Payment

- *To order call Monday - Friday, 9.00 am to 6.00 pm.
- *DELIVERY: Add £2.50 on orders up to £150.00 in value. Add £6.00 on orders between £150.00 & £750.00 in value. Add £12.00 on orders above £750.00 in value.
- *Add VAT to the total price, except on books.
- *Payment is by credit card, cheque or money order.
- *Government depts, Educational establishments and PLE companies are welcome to purchase with an official order.
- *International orders accepted with credit card only.
- *Postage added at cost.

Anet (AppleTalk)	£25.00
MacNet (PhoneNet)	£19.00
DD Floppy Disk	£0.90
HD Floppy Disk	£1.50
Diskette storage box 80	£9.00
ImageWriter Ribbons	£3.75
Mouse Mat	£4.00
Toner Cartridge NT	£69.00
Laser Disk Labels	£12.00
Anti Glare Screens	from £35.00
Security System	£35.00
Mac II Stand (vertical)	£65.00
SE/Plus/Classic Tilt & Swivel stand	£24.00
Mac Carry Case	£59.00
Toolkit	£15.00

PRINTERS

Epson LQ 400 (budget 24 pin printer)	£245.00
Epson Serial card (for Epson's that don't have a serial port)	£25.00
Graphlet LX (access a range of parallel printers)	£130.00
HP DeskWriter (superb inkjet, new low price/AppleTalk)	£550.00
HP LaserJet II (biggest selling Laser printer ever)	£1595.00
HP LaserJet III (new ultra high quality laser technology)	£1595.00
Postscript cartridge & AppleTalk for LaserJet III	£680.00
HP PaintJet (cheapest way to proof in colour 150 DPI)	£850.00
LabelWriter (mini thermal printer produces sticky labels)	£195.00
Tektronix ColorQuick (best value thermal technology)	£1995.00

PRINTER SOFTWARE

Epson LQ Mac (driver and fonts for serial Epson LQ printers)	£69.00
Freedom of the Press (PS interpreter for many printers)	£245.00
Freedom of the Press Light (cut down version)	£65.00
TScrip (software PostScript interpreter for non PS printers)	£115.00

DATA STORAGE

20 Mb external drive (Rodime)	£245.00
42 Mb external drive (Disk/Micronet)	£325.00
75 Mb external drive (Disk/Micronet)	£425.00
100 Mb external drive (Disk/Micronet)	£525.00
210 Mb external drive (Disk/Micronet)	£695.00
400 Mb external drive (Disk)	£1195.00
600 Mb external drive (Disk)	£1695.00
Tape Backup 150 Mb (Disk)	£595.00
Optical Drive 600 Mb (Disk)	£2495.00
CD ROM Drive (Toshiba)	£450.00
External 800K Floppy Drive	£159.00
45 Mb Syquest Drive (Rodime/Micronet)	£495.00
Syquest Cartridge	£65.00
WORM 940 Mb (Panasol)	£2350.00

MONITORS

E-Machines 19" 8 bit	£3495.00
E-Machines 19" 24 bit	£4850.00
E-Machines 16" 8 bit	£1895.00
E-Machines 16" 24 bit	£3295.00
Pro Nitron 19" 8 bit	£3295.00
Pro Nitron 19" 24 bit	£4195.00
Pro Nitron 19" Grey	£1295.00
Radius Pivot	from £725.00
Radius Grey Scale 21"	£1750.00
Radius Direct Colour 8	£3500.00
Radius Direct Colour 24	£4450.00
Raster Ops 19" 8 bit	£3750.00
Raster Ops 19" 24 bit	£4995.00
Strategy 19" 8 bit	£2595.00
Strategy 19" 24 bit	£3895.00
Supernac 19" 8 bit	£2795.00
Supernac 19" 24 bit	£3990.00
Hitachi Colour 14" (great alternative to Apple 12" or 13")	£395.00
Hitachi Colour 19" 8 bit	£3250.00
Hitachi Colour 19" 24 bit	£3750.00
Hitachi Mono 21" Mac II	£1195.00

SCANNING

Agfa Focus II 600GS (best colour A4 scanner)	£3895.00
Coloset (turns a B&W scanner into a colour one)	£295.00
HP ScanJet Plus (quality greyscale scanner at 3000PI)	£1350.00
Microtek 3002S (good quality low cost colour)	£1550.00
OmniPage (best OCR currently in existence needs 4Mb)	£540.00
OmniPage (add in to above for dot matrix OCR)	£75.00
OmniSpell (spelling checker for OmniPage above)	£75.00
Ricoh RS322 (256 Grey Scale with software)	£895.00
Read It 2.0 (first OCR package sold widely)	£295.00
Read-It Personal (budget OCR for handhelds)	£155.00
ScanMan (biggest selling handheld new upgraded)	£295.00
Scan X Pro (scans up to 1500 DPI with grey scales)	£1495.00
Scan 300C (colour at an amazing low price)	£1650.00
Sharp JX 300 (superb quality A3 colour scanner)	£2390.00
Sharp Colour Hand Held (baby desktop colour scanner)	£495.00
ThunderScan (scanner fits into imageWriter ribbon area)	£189.00
Typist (handheld with best built in OCR needs 4Mb)	£445.00

PROGRAMMING

ProGraph (new programming tool)	£245.00
Prototype II (creates C code for Windows Menu Dialogs)	£195.00
QuickBasic (a little BASIC ringer from Microsoft)	£59.00
SmallTalk V (best version of the definitive OOPS language)	£139.00
Think C 4.0 (PageMaker was written in this)	£135.00
Think Pascal 3.0 (it probably could be rewritten in this)	£135.00
TMON (debugger catches your Mac when your app crashes)	£98.00
ZBasic 5 (heavyweight BASIC with good toolbox access)	£125.00

MATHS & STATS

Mathematica II (cult equation solver and graphing tool)	£495.00
Mathematica SE (as above for little Macs)	£325.00
Super Anova (extensive Anova statistical capability)	£425.00
StatView II (broad based statistical capability)	£345.00
StatView SE & Graphics (as above for the little Macs again)	£245.00
Theorist (prelude to the Mathematica crown good reviews)	£250.00

MUSIC

Concertware (instrument maker composer and player)	£45.00
Concertware + MIDI (as above for MIDI)	£125.00
Jam Session (play in a Rock 'n' Roll band)	£39.00
Practica Musica (teaches music theory and ear training)	£80.00
Super Studio Session (B voice composer play very good)	£89.00
MIDI Interface	£57.00

HYPERCARD

EuroStack 2.0 (full embracing Euro shell conforms to N Curric)	£55.00
EuroGuide UK (maps demographics scans you add to shell)	£55.00
HyperAnimator (animation stack for incorporation into stacks)	£115.00
HyperBible (bible maps of holy land characters)	£125.00
Icon Factory (huge library and icon developer for V1)	£55.00
Plus 2.0 (full colour alternative to HyperCard also for PC)	£265.00
Script Expert (scripting shell for foolproof syntax creation)	£49.00
SuperCard (alternative to HyperCard has powerful language)	£210.00

TRAINING

Typing Instructor Encore (good training from basics to touch)	£25.00
Mavis Beacon Teaches Typing (basics to touch very good)	£24.00
MacTeach (specifically Mac) (audio/disk training)	each £55.00
Professor Mac (new training - use your Mac to learn your Mac)	£29.00
TEACH YOURSELF GUIDES TO: 4th Dimension, PageMaker 4.0, Excel	
HyperCard 1.0, Quark Xpress 2, Word 4	each £69.00

UTILITIES & DA's

FILE & DISK MANAGEMENT

011 Utilities (the pro's file & disk recovery)	£99.00
Complete Undelete (recover trashed documents)	£39.00
Can Opener (view data files without the application)	£75.00
Copy It Mac (backup some protected software)	£29.00
ClickChange (interface customisation)	£10.00
Disk Express II (speed up, unfragment hard drives)	£59.00
DiskDoubler (file compaction to save space)	£49.00
Disk Top 4 (powerful DA finder)	£69.00
File Director (9 essential DA's and Finder enhancement)	£75.00
Goler (search key words in multiple text files)	£54.00
HandOff II (no more "application is busy or missing")	£59.00
InitPicker 2.0 (choose startup inits)	£35.00
MultiDisk (best hard disk partitioner)	£59.00
Norton Utilities (hard disk utility from the PC)	£65.00
Now Utilities (12 wonderful inits & DA's)	£89.00
On Cue (launch applications and documents from menu bar)	£39.00
On Location (lightning fast file location)	£85.00
Personality (allows customisation of the Mac interface)	£55.00
Shortcut (extra commands in open dialogue box)	£49.00
SUM II (essential utilities plus guard against crashes)	£89.00

SECURITY

After Dark 2.0 (screen saver with many options)	£29.00
A.M.E. (very sophisticated data security)	£195.00
DiskLock (reasonably priced data file security)	£125.00
Empower I (file & data security)	£120.00
Empower II (sophisticated file & data security)	£225.00
MacSafe II (file security)	£125.00
FileGuard (data encryption)	£145.00
Nightwatch (hard disk security)	£150.00
QuickLock (look out spying eyes from your data)	£55.00

BACKUP & VIRUS PROTECTION

AutoSave (saves your work at user determined intervals)	£29.00
Backmatic (for those who hate backing up)	£55.00
FastBack (very fast and compact)	£105.00
Redux (best backup program on the market)	£59.00
Retrospect (most sophisticated archival backup)	£130.00
Retrospect Remote (THE solution for network backup)	£225.00
SAM 2.0 (Symantec's anti virus utility)	£70.00
Virex 3.0 (best virus tracer & eradicator of all)	£59.00

PRODUCTIVITY ENHANCERS

Calculator Constructor 2 (creates DA calculators)	£54.00
Calendar Maker (customise calendars)	£39.00

Calendar (brilliant alarm, reminder and diary system)	£32.00
DiskPaper (print to disk from any application)	£95.00
Dynodex (phone/address DA database with filofax printout)	£89.00
Exposure Pro (screen dump utility with paint tools)	£82.00
Hyper DA (read HyperCard files from a DA)	£49.00
Master Juggler (100's DA's & fonts bypassing F/DA Mover)	£59.00
MultiClip 2.0 (multiple copies & pastes)	£65.00
QuickKeys 2.0 (macro maker, time saver utility)	£99.00
QuickDex (lightning fast DA database, essential)	£35.00
Screenshot (low cost full featured screen dump utility)	£35.00
Stepping Out 2 (software big screen extender)	£59.00
Smart Alarms (DA reminder/diary system)	£65.00
Smart Alarms multi user (network diary version)	call
SmartScrap & Clipper (enhanced scrapbook)	£65.00
stopWatch 3.0 (client & project time/activity monitoring)	£85.00
Stuffit DeLuxe (premier file compression program available)	£85.00
Suitcase 2 (manages 100's DA's & fonts)	£49.00
SuperGlow II (print images to disk)	£69.00
SuperSpool (best ImageWriter spooler)	£59.00
SuperLaserSpool (Laser & ImageWriter spooler)	£95.00
S.P.A.M.M. (software maths co-processor)	£57.00
Tempo II (the most powerful macro maker)	£99.00
WindowWatch (logs time usage of windows)	£75.00

ENTERTAINMENT

SIMULATIONS

4th and Inches (manage an American Football team)	£29.00
Chuck Yeager Flight Trainer (colour & different aircraft)	£25.00
Crazy Cars (exciting driving simulation)	£24.00
The Cycles (excellent motorcycle racing app)	£35.00
Flight Simulator (the famous Microsoft one)	£39.00
Falcon 2 (exciting & networkable flight simulator)	£34.00
Fokker Triplane (World War One flight simulator)	£29.00
Jack Nicklaus Golf (highly rated simulation)	£39.00
Life and Death (be a doctor, perform actual operations)	£24.00
MacGolf Colour (highly addictive (all other Macs))	£56.00
MacSki (get in shape for the slopes)	£42.00
Chuck Yeager Flight Trainer (colour & different aircraft)	£25.00
Net Trek (multi player network space game)	£39.00
Sim City (design and run your own city)	£32.00
Sim City Colour (design and run a colour city)	£52.00
Sim Earth (design and run your own planet)	£49.00
Space Rogue (equivalent of Elite only better)	£27.00
Strategic Conquest (top war simulation)	£39.00
The Duel Test Drive (race your Porsche round California)	£38.00

STRATEGY

Ancient Art of War (Sun Tzu's high quality war simulation)	£29.00
Ancient Art of War at Sea (seafaring version of above)	£29.00
Balance of Power (use political strategy to keep the peace)	£24.00
Balance of Power 1990 (sequel to the best seller)	£24.00
Balance of the Planet (save the environment and world)	£35.00
Darwin's Dilemma (based on evolution)	£29.00
Guns & Butter (run your own country)	£27.00
Patton vs Rommel (strategy war game)	£19.00
Teserae (colour matching mind stretch)	£29.00

ADVENTURES

Arthur (text based adventures of the round table)	£32.00
Cladad (fantasy adventure)	£29.00
Deja Vu (hard boiled private detective adventure)	£24.00
Deja Vu II - Lost in Las Vegas (the sequel)	£24.00
Manhunter New York (excellent graphic adventure)	£35.00
Manhunter San Francisco (the adventure continues)	£35.00

BOARD GAMES

Bridge (from novice to advanced playing levels)	£29.00
ChessMaster 2100 (best Chess game now updated)	£25.00
Go Junior (award winning version of famous game)	£21.00
Ishtido (award winning oriental Go/Mah Jongh style)	£38.00
Solitaire (9 different patinoos games)	£24.00
Solitaire Colour (with beautiful graphics)	£24.00
Shanghai (Mah Jonghish game with stunning colour)	£21.00
Stratego (award winning classic war game)	£35.00

KEY WORKS on:-

- Plus & SE only. Plus, SE, II. Plus, SE, II, CX and SE30
- Many games do not work on the CI, FX, Classic, Si, LC and Portable
- Please enquire before ordering games to run on these machines.

BOOKS

We carry a wide range of books. Please call

All MacLine products are sourced from the official UK distributor where one exists. This entitles you to full backup and support in this country, not the United States.

Accept no less. This may be more expensive in the short term but consider what happens when an upgrade is released.



WE WILL MATCH ANY GENUINE PRICE

MacChat

Norah Arnold looks at the latest Macintosh developments and product news.

Apple Petitions FCC for Use of Radio Waves For Data Transmission by All Computer Makers

Apple Computer, Inc. have filed a petition with the Federal Communications Commission (FCC) that, if approved, would let computers transmit and receive information over radio waves instead of through a wired network.

The petition asks the FCC to allocate a part of the radio spectrum so that all computer manufacturers be permitted use of radio waves for wireless computing. Apple believes that approval of the petition is an important step in the establishment of the next generation of personal computing. Apple's petition paves the way for the establishment of a new class of data communications, called Data Personal Communications Services (Data-PCS).

If Apple's petition is approved, personal computer users in the future will be able to communicate with other users and with computer peripherals within a building or a campus over radio waves. This innovation would eliminate the need, in many cases, for local communications to travel on wired networks.

"With the rapid advances in portable computing and wireless communications, we believe it is essential that computer users have access to this vital communications resource in the future," said John Sculley, Apple's chairman and chief executive officer. "Wireless networks will change the nature of information tools, making them as mobile and spontaneous as the individuals using them."

"Apple's action, which will benefit all personal computer users, is motivated by a desire to ensure that the United States will have

made the most forward-looking public decisions, allowing wireless networking to become a reality," Sculley added.

Specifically, Apple petitioned the FCC to allow computer communications exclusively on 40 MHz of the radio frequency bandwidth between 1850-1990 MHz to transmit data at high speeds (for example, 10 megabits per second) over short distances (up to about 150 feet).

"The convergence of wireless communications and computers will dramatically change the nature of computing," said David Nagel, vice president of Apple's Advanced Technology Group. "For example, students and teachers would no longer be confined to a rigid classroom set-up. Instead, computing and communications—and therefore learning—could happen any place. Users in the workplace would enjoy similar advantages. Employees would be liberated from the constraints of physical networks, which would enhance creativity and personal productivity," Nagel said. This type of "spontaneous" or "ad hoc" local area networking would supplement today's wired network configurations, which typically consist of telephone lines, coaxial cables, and fibre optics. The cost, particularly the capital cost, of hardwiring a building is high and then users are restricted as to when, how and where they can use their computers to move data. Apple recognizes that radio spectrum is scarce and in high demand. Considering this, along with the intense activity being focused on proposals for new voice communications services, Apple is requesting that the FCC move quickly in giving equitable

consideration to data communication when determining future bandwidth allocations.

"We're urging the public to support Apple's appeal that the allocation of radio spectrum go beyond voice communications to include an appropriate emphasis on data communications," Sculley said. "Our hope is that computer users will view the allocation of the radio spectrum for wireless computing as Apple does—as an important step in advancing the future of personal computing technology."

Apple Computer, Inc. declares quarterly dividend

The board of directors of Apple Computer, Inc. announced the declaration of an \$0.12 per share dividend for the company's first fiscal quarter ended December 28, 1990.

The dividend, Apple's sixteenth consecutive quarterly dividend, is payable March 15, 1991 to shareholders of record as of the close of business on February 22, 1991. Apple announced on January 17, 1991 earnings of \$150.5 million, or \$1.28 per share, for the quarter ended December 28, 1990, on net revenues of \$1.676 billion.

Separately, Apple announced that at its Annual Meeting of Shareholders held on January 30 all of management's nominees for the Board of Directors were elected. Albert A. Eisenstat, Arthur Rock and John A. Rollwagen were reelected to the Board, and two new nominees, Michael Spindler, Apple's president and COO, and Bernard Goldstein, were also elected. They join the continuing board members, John Sculley, Peter O. Crisp and A. C. Markkula, Jr., who are not up for reelection until 1992.

All other proposals set forth in Apple's proxy materials for the meeting were also approved, including amendments to Apple's Employee Stock Purchase Plan to increase by 2,000,000 shares the number of shares available for purchase by employees under the plan.

Apple Computer, Inc. Sponsors New Publication: "QUERY: An Information Source for Administrative Computing in Higher Education"

Apple Computer, Inc. and PUBLIX, a Cupertino-based

publishing and information services company, have announced a new quarterly publication, **QUERY: An Information Source for Administrative Computing in Higher Education**.

Campus administrative computing systems manage financial, student, library, alumni, scheduling, facilities and other crucial data. They incorporate equipment ranging from mainframes to personal computers and large quantities of information in a variety of formats.

QUERY is designed to help administrative and information system professionals integrate Apple Macintosh personal computers into these complex and vital systems.

QUERY will provide insights into how and why various tools and products are being used with the Apple Macintosh computer to make information more accessible on college campuses. Coverage will emphasize examples and case studies of new information technology projects implemented and underway, and will address management and planning as well as technical issues. In addition to providing information about a range of Apple and third-party computing tools, coverage will include listings of consultants and integrators and information about relevant publications.

Written primarily for administrators and computing personnel in higher education, **QUERY** will also be of interest to software companies and consultants interested in the higher education market.

"Macintosh computers are popular among both higher education administrators and the information professionals who design and support campus computing systems," said Burt Cummings, director of higher education marketing.

"Colleges are using Macintosh computers to provide easy access to campus-wide information systems as well as an extensive line of productivity and presentation applications. It's also important to many institutions that Macintosh computers can run popular MS-DOS applications, like Lotus 1-2-3, with the proper emulation software."

"In the past several years, many

products have been introduced that allow the Apple Macintosh computer to work with a variety of computing platforms and networks, including Macintosh-to-mainframe and network interfaces, relational database languages, CASE tools, and tools that speed application prototyping and development," said Bruce Stancombe, manager of higher education marketing for administrative solutions. "**QUERY** will help information system professionals keep informed about these products and tools, and include practical information from the people actually implementing administrative computing solutions."

Higher education institutions are invited to contribute to **QUERY** by sending brief descriptions of institutional use of Macintosh in administrative computing and/or questions about such use to editor, John P. Noon, at the address below. Institutional examples may be published as separate profiles or incorporated into feature articles, and selected questions and answers will be published in each issue. **QUERY** will be published quarterly from March, 1991 in both hard copy and electronic formats.

Administrators and computing personnel, as well as software companies and consultants in higher education can subscribe free of charge by addressing requests on institutional or company letterhead to:

QUERY, P.O. Box 2716, Sunnyvale, CA 94087. **QUERY** may also be contacted electronically by sending e-mail to the following INTERNET address: query@apple.com. Apple Computer, Inc. also sponsors another **PUBLIX** publication, **Syllabus for the Macintosh**, a bimonthly newsletter covering higher education curriculum solutions.

GO Licenses AppleTalk Networking Software for its new Operating System

Apple Computer, Inc. and GO Corporation have announced that AppleTalk has been licensed by GO for its new pen-based operating system, PenPoint. The AppleTalk networking software was licensed from Apple under the AppleTalk Licensing Program.

"With the announcement of AppleTalk support in GO's PenPoint

operating system, the benefits of AppleTalk will be extended to a new class of user," said Jim Groff, director of networking and communications product marketing for Apple Computer. "AppleTalk, with its ease of use through automatic self configuration, is uniquely qualified to deliver the dynamic connectivity required by the mobile computer market."

"Obtaining the AppleTalk license from Apple enables GO to develop additional connectivity solutions to connect PenPoint machines into AppleTalk networks," said Robert Carr, vice president of software engineering at GO Corp. "Over time, PenPoint machines will be able to utilize many of the services that the AppleTalk network system provides, including access to AppleTalk Filing Protocol servers from Apple, Digital, and other networking software providers."

"GO looks forward to enhancing the AppleTalk support within PenPoint to provide solutions for our customers," Carr continued. "A significant benefit of AppleTalk for PenPoint users is its ease of use, even in complex network environments. Simplifying network access for our customers is a key goal of the PenPoint operating system."

The concept of plug-and-play networking has been the focus of AppleTalk since its introduction in 1984. Dynamic Node Addressing, a patented technology in AppleTalk, allows network devices to automatically acquire their own node address at start-up time. This allows a computer user to easily join an AppleTalk network without contacting a network administrator or performing any special configuration tasks.

AppleTalk's ease-of-use and automatic self configuration makes it particularly well suited for use with mobile computers and wireless connectivity.

AppleTalk is the networking protocol used in Photonics Corporation's PhotoLink product, a directed infrared link that allows desktop computers to be quickly networked in open office environments without the expense and effort of installing cable. AppleTalk has also been selected as the networking software in Photonics' new Infrared Transceiver

product, announced. This new product, designed to be integrated into portable computers, brings the advantages of wireless networking to the portable market.

"AppleTalk is the defacto networking standard for mobile computing," said Gary Hughes, chief executive officer of Photonics. "Our Infrared Transceiver eliminates the need for wires, and AppleTalk's Dynamic Node Addressing eliminates manual configuration, allowing for true mobility." The AppleTalk network system offers users a wide variety of price/performance options because it operates with all major networking hardware standards, including IEEE 802.3 (Ethernet) and IEEE 802.5 (Token-Ring), as well as low-cost LocalTalk. Because of AppleTalk's low-cost option, ease of use, and general availability, it has become the defacto standard for sharing network resources such as printers for all types of personal computers. All major vendors of personal computer printers, including Apple, Hewlett-Packard, IBM, QMS, Canon, and others, support LocalTalk on their most popular models of networked printers.

In addition to printer sharing, AppleTalk protocols also support more advanced client-server applications. Electronic mail is available for AppleTalk from numerous companies including Microsoft Corporation and CE Software. File sharing is available on all of the major network operation systems including NetWare and LAN Manager, and is also available for most minicomputer operating systems including Digital's VMS and AT&T's UNIX.

The AppleTalk Licensing Program was introduced in June of 1990, as part of Apple's goal to extend AppleTalk to all major computing environments.

The AppleTalk Licensing Program has made it easier for developers to offer a comprehensive set of AppleTalk-compatible networking services because it makes standard AppleTalk source code available at a very low cost. These standard AppleTalk protocols are compatible with the nearly three million AppleTalk nodes installed worldwide today including millions of Macintosh personal computers.

APPLE enhances Macintosh Portable

Apple Computer UK Ltd have taken several steps to enhance its Apple™ Macintosh™ Portable computer, offering improvements in screen readability, pricing and memory.

First, Apple added backlighting to the Portable's Active Matrix Liquid Crystal Display (AMLCD). The backlighting makes the display easier to read under almost any lighting conditions.

Second, Apple repriced the product, lowering the price by £200. And, third, Apple added an extra megabyte of RAM to the new Macintosh Portable to allow it to fully take advantage of its upcoming System Software 7.0.

The new features extend the Macintosh Portable's functionality as the Macintosh for people with more than one desktop. The backlit display has all the major advantages of active matrix technology: fast response for smooth mouse tracking and high contrast for a wide viewing angle, with the added benefit of user-adjustable backlighting. The Portable's AMLCD has up to five times the performance of standard LCD screens. As a result, the Macintosh Portable delivers the superior text and graphics that people associate with Macintosh. With the addition of backlighting, customers will now be able to use the Portable in an even wider variety of lighting conditions.

Apple has also increased the RAM expansion alternatives for the Macintosh Portable by offering both 2MB and 4MB configurations (the standard configurations include either 2MB or 4MB of RAM and a 40MB hard disk drive). More standard memory means users will be ready for the powerful features of Macintosh System Software 7.0 when it ships later this year. In addition, the Portable can accommodate up to 8MB of memory when configured with third-party RAM cards.

Apple will be offering a backlit AMLCD for existing Portable customers. This dealer-installed upgrade provides current owners with the same user-adjustable backlighting available on the new model. The Macintosh Portable Backlit Upgrade will be available from Apple Authorised dealers at a suggested retail price of £545. A

new Macintosh Portable is available immediately: • Macintosh Portable 2MB RAM/40MB Hard Disk £2,685 • Macintosh Portable 4MB RAM/40MB Hard Disk £2,855 The new Macintosh Portable replaces the current model effective immediately.

For customer information dial 100 for Freefone Apple.

X Window System Software

MacX version 1.1 and X Window System version 2.1 for A/UX provide access to X-based applications for Macintosh users running either the Macintosh or A/UX® operating system. MacX version 1.1 provides X display server capability within MultiFinder® for either the Macintosh operating system or A/UX. MacX software offers unique ease-of-use features, such as Macintosh pull-down menus and X applications in Macintosh windows.

MacX version 1.1 is now based on X11R4; its features include:

- improved performance (two to three times) over MacX version 1.0
- use of significantly less memory
- colour graphics
- ability to cut and paste text between X applications and Macintosh applications.

X Window System version 2.1 for A/UX includes MacX version 1.1, as well as X11, a standard X Window System environment for developers and technical users. X11 includes standard client, server, libraries, and toolkits necessary for X application development. X11, which requires knowledge of UNIX and X, will be of interest to developers and technical users who require a standard X Window System environment.

System requirements:

- System software version 6.0.4 or later
- Any Macintosh with at least 2 Megabytes of RAM

When using A/UX operating system with either MacX software or X Window System version 2.1 for A/UX, system requirements include:

- A/UX version 2.0 or later
- Any A/UX-capable Macintosh system with at least 5MB of RAM

TrueType™ Information Stack


Sample screens from the TrueType™ Information Stack from Apple Computer, Inc. available from the Macintosh Library. The topics covered are:-

- Today's Model: Bitmap Fonts
- What are Outline Fonts?
- What's all this Fuss About Instructions?
- TrueType™ History and Technology
- System 7.0 and PostScript™ Printing of TrueType

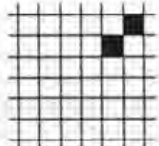
Hard Disk:aMagazine:April Mag:for April:True Type Stack f:TrueType™ Informa

Instructions

► Try building your own 9 point K by clicking in the pixel grid below. You will see that it is not an easy task by hand, let alone automatically by a piece of software.



Outline



Your version

Click for Answer


◀ ▶ ↺

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Today's Model: Bitmap Fonts

► The original Macintosh (and today's Macintosh) uses bitmap fonts for screen display. This means that the system has "pictures" or bitmap images of each font which are copied to the screen when required by the software application.

A blow-up of a 12-point sample of Helvetica reveals that it is composed of dots, or bits, hence the name "bitmap" font:

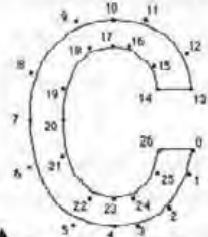


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TrueType™ Technical

► The actual TrueType format is based on quadratic curves. Quadratics are very easy to compute, which translates into very high performance. This is important when you consider that many users will run System 7.0 on a Macintosh Plus.



Quadratic curves are also easy to translate to from other curve types (like Bézier curves). This was essential to allow type vendors to easily bring their font libraries into the TrueType font format.

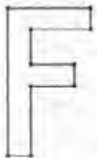
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What are Outline Fonts?

► Outline fonts are mathematical descriptions of typeface designs. Each character in an outline font is a set of coordinate points which describe the boundary of the character shape.

A single set of coordinates is all that is needed to create characters of any size. (Like rubber bands, you can stretch outline fonts to virtually any size).



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

TrueType™ Technical

► The instruction language for TrueType is very comprehensive and allows type vendors a great deal of flexibility. The language is stack-based and executes very quickly. Because the instruction set was defined cooperatively with type vendors, it is designed to allow for easy translation from other instruction techniques.

Instructions

Pts: [0,7,0] R2G:1 Loop:0

in0:64 Hide:0 FLIP AB:0 AS:3

Proj:  Free: 

Stack: 37 26 13 37 14

0:HPUSHB[0]

1:HDAP[1] 7

2:HLAP[01101] 20 37

3:HPUSHB[0]

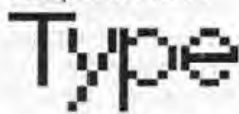
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What are Outline Fonts?

► As with the printer, using outline font technology for screen display provides the best possible font for a given requested size. Also, because there is only one size of the font master, the amount of disk space required is much less than if you had 12 different sizes of bitmap fonts installed.

bitmap fonts on screen



outline fonts on screen

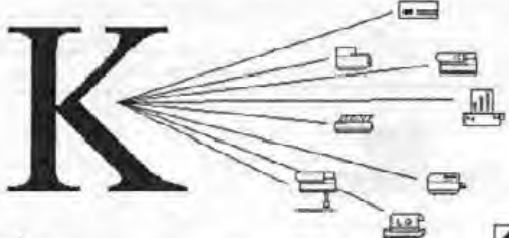


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System 7.0 Printing

► As you can see, the printing model on Macintosh works the same way as it does today, with the powerful addition of support for printing TrueType to all devices.



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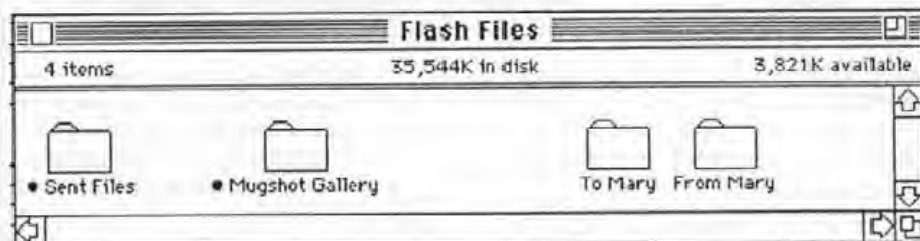
Flash in the Folder

A review of a new Beagle Bros. network product by Ewen Wannop.

Most of us only have one Macintosh, and the nearest we get to networking is the LocalTalk cable running to our LaserWriter printer. There are some that have many Macintoshes linked by this same LocalTalk cable

departments together.

These scenarios and others like them, have been addressed in many different ways by many different programs. A full network system like TOPS is most often found



into a complete network. At the college where I teach, we currently have 11 assorted computers attached to three printers. They are all connected by a single LocalTalk cable. Students sit down in front of whichever computer happens to be free. If they do not have a blank disk to hand they simply leave the files they have been working on wherever they happen to be. When they next sit down, they expect to find the files available to them.

With a grander network, or one which spans a complete building, there will be the need for an E-Mail service to link the various

dealing with this kind of situation, but it is expensive and requires a unique copy of TOPS for each computer on the network. 'Public Folder', a Public Domain program for Claris users, allows files to be easily moved from one computer to another, but has the disadvantage that you have to fetch a file and cannot place it where you wish. Beagle Bros., a familiar name amongst Apple II users, have entered the Macintosh market with a unique product which does many things that any network user might require. It has the advantage that you only need to buy one copy of

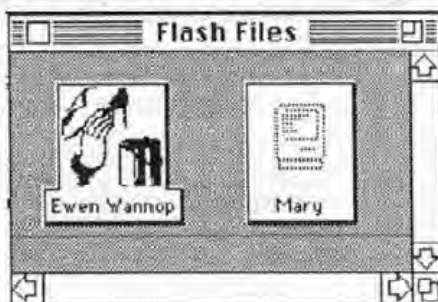


the program for a single zone on your network. A zone can have up to 32 computers and it comes complete with integral humour, something that is often lacking in modern Apple software!

What does Flash do

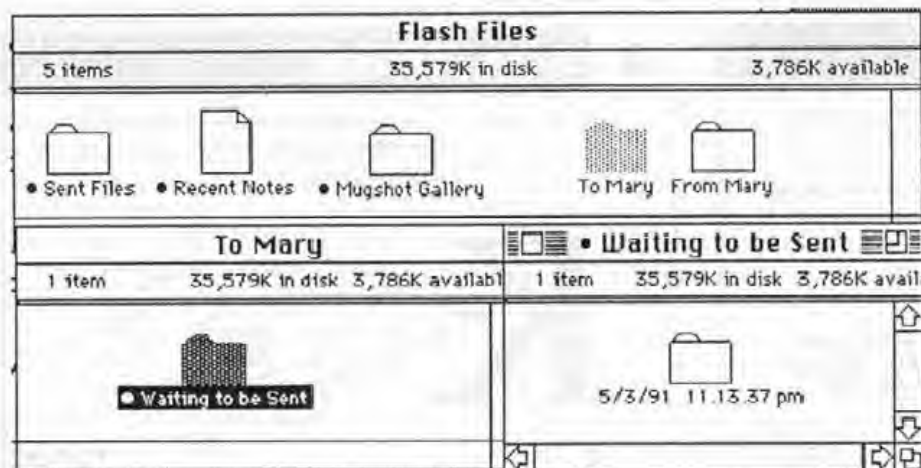
Flash really only consists of a startup Init file and a Desk Accessory, but the disk includes copies of ADSP, Macintosh and other useful files. Thoughtfully included is a HyperStack that reproduces the complete Flash Manual page by page!

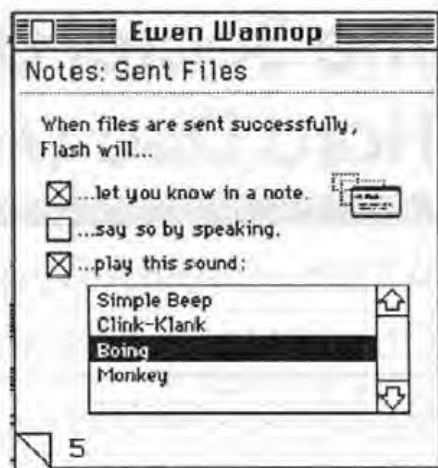
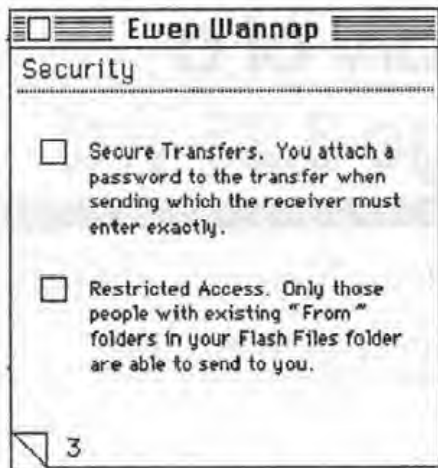
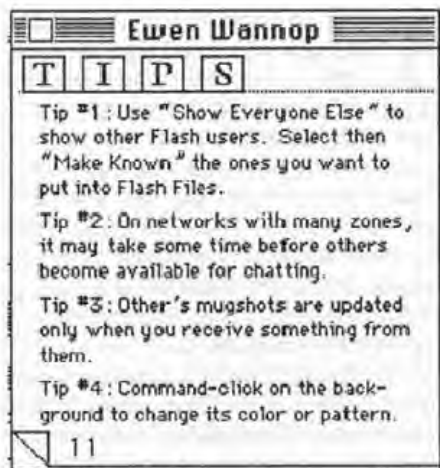
Having installed Flash in your system you then create some special folders. The main folder 'Flash Files' is set up with a separate folder for



each of the computers on your network. These folders are named as 'To George', 'To Mary' or whatever your computers are named in the Chooser. Once the folders have been setup on all your machines you are ready for action.

This is where Flash is different from many other network products. Simply placing a copy of a file (remember to press Option as you drag to copy a file) into a 'To Mary' folder will send a copy of the file to 'Mary' immediately. She will know it has arrived as a window will open while the speaker plays her a warning sound. Sent files are not deleted but placed in a 'Sent Files' folder. The humour comes from





your choice of sound and an optional MugShot that you can create yourself.

Because you send files, and do not have to go and fetch them, Flash allows a proper E-Mail system



to work. Just pop in your message into the correct folder and in a Flash the message is at the other end waiting to be read. Of course any kind of Macintosh file can be sent, not just a message.

Added Bonus Features.

Flash allows much more than just this. You can password protect a file if you wish. When you add a


password to the file, it is not sent till the receiver enters the same password when prompted.

You can also protect yourself from having your disk filled up by files that might be received by simply telling Flash how much space you would like reserved on your disk.

And if all that is not enough, or you just could not be bothered to actually open the word processor to write a message, the Flash desk accessory allows you to send a short message in Chat mode to anyone on the network.

Conclusion

For most needs of those with a network, Flash will do all you want. It is considerably cheaper than any other program of this kind because you will only need the one copy per zone. It works fine and seemed quite transparent on our college network when I tested it. I found no problems while using it. It is more tolerant than TOPS of computers being switched on and off!

The only disadvantage I could see was that for Flash to work you need quite a lot of folders set up within the Flash Files main folder. You would need to be fairly organised to keep track of what was going on with all of those assorted folders. But it does work a treat despite all of that and is well recommended! 

info

Product : Flash in the Folder

Publisher : Beagle Bros.

Available from :





MacLine

Tel: 081 643 4626

Price : £ 145

Value :    

Performance :    

Documentation :    

Open It!

A desk accessory for sharing files on the Macintosh

Open It! is a desk accessory from TENpointO that allows users to share files between incompatible programs. Ideally designed for inter-office file sharing, desktop publishing and telecommunications, Open It! enables users to save files in a common file format and transfer files without using the creating application.

While working in an application, users access Open It! from the Chooser and merge an Open It! file into the working document.

With Open It!, users can create multiple scrapbook files, scale graphics images or text from one to 1,000 percent, and measure or size graphics with on-screen rulers before placement in the receiving document.

A thumbnail feature allows users to view up to eight pages at a time in the scrapbook and other files read by Open It!. Just point and click on any portion of the thumbnail page and move directly to a full-scale view of that portion. A Preview function enables users to print a file to screen and to view the document before printing to disk or paper.

The Print It! utility of Open It! allows users to print to disk any file, which can then be accessed with Open It! and placed into any application/document.

With Open It!, files can be sent via modem to other telecommunications users or over file networks without sending the creating application. A public domain "viewer" is included with Open It! which allows files to be shared, viewed and copied by others who don't have Open It!.

Open It! requires an Apple Macintosh with a minimum of 512K RAM.

The Secret Diary of a Hard Disc (Age 3.25 yrs)

A Tale of Sorrow or How Norton Utilities Could Have Come to the Rescue by Mike Dawson.

Just before Christmas my Macintosh gave me a most unexpected present, a hard disk crash - two of them. Whilst working on a word processor file the screen locked and all went quiet in the Dawson household. I couldn't understand it, I do get system hangs due to my predilection for hacking about in the system and using public domain software. However I'm using a commercial word processor which has never crashed or given any cause for concern. So as everything has frozen on the screen I reach for the ever ready reset button and 'boooillinnngggg' my Mac is off the starting blocks. To my horror the internal disc drive makes loud clonking noises and the Mac never the less manages to boot. My problems were however just starting. Trying to use the internal hard disc I found that my computer again froze. I reached for the Qisk utilities disc for it was one of their brethren. Lo, it came to pass that the verify utility would not activate and remained dimmed in the pull down menu. In desperation as I did not have any

other utility programmes I reached for the disk doctor utility supplied by Apple. The result was less than helpful as it did not want to know the sick Qisk. The Apple HD setup utility did even worse as it did not even recognise the Qisk as a SCSI device! Going back to the Qisk utilities I tried to reinstall the start-up configuration programme on the hard disc. This was done with much clonking and wurring from the drive. Using the disc drive once again caused the Mac to lock up.

I felt really mean now and did the most devilish thing you can do to a hard drive, I reformatted it. I must add here that I did have a full back up of the disc on a removable hard disc made about a week earlier so I felt safe in doing this drastic thing. In reformatting the hard disc there was again much ado about clonking and wurring. A ray of light then came flickering into my life, the format completed successfully.

On opening the hard disk I discovered the usual 63 Mbytes of memory. However when commencing testing on saving a few small files the Mac again locks up. As there is no external lamp to indicate disc activity on an internal hard

disc with a Mac II I removed the Mac lid and observed the activity LED. Rebooting the Mac from a floppy disc I retried the test. Again the Mac locked and I was able to notice that the internal hard disc lamp was continually on. The Mac seemed to be either trying to write or read from the hard disc and was stuck in some interminable loop. Again the reset button came to the rescue to bring my Mac back to life. Now I was left with a sick hard disc so I called the Qisk distributor, Computer Capability. I was quickly transferred by the receptionist to the service department where a friendly technician listened to my story of sorrow. He was able to tell me that my version of the Qisk utilities did not have a functioning verify section hence the continually dimmed menu. He also said that the trouble seemed to be mechanical and that I should return it to



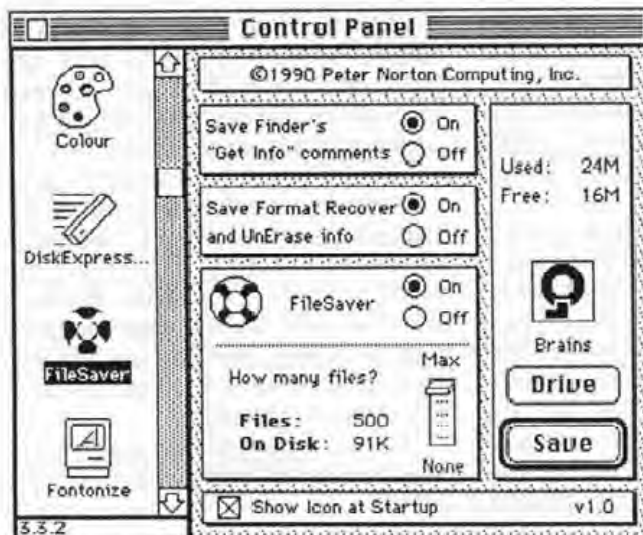
Computer Capability for a check over, and if possible, repair.

21st December 1990

I packed up my hard disc in its original packaging and waved goodbye to it at the village post office.

27th December 1990

My Mac gave me a second present, the new removable hard disc decided to come out in sympathy and also crash. So bad was this that the Mac would not even recognise its existence. I was left with no option but to reformat and lose a lot of work. This I duly did and all was well once again. Then later for some reason the hard disc absolutely refused to be recognised as a start-up disc. I think this is due to my pulling the hard disc icon to the waste basket before shutting down the Mac. This in retrospect



was a silly thing to do but we all do these things sometimes. Anyway I tried rebuilding the desktop, rebuilding the PRAM, rebuilding the system folder, and reinstalling the start-up utility, all to no avail. I tried everything in the removable hard disc manual over and over again. Still it refused to be recognised by my Mac as the start-up disc. So yet again I was forced to use the ultimate weapon, reformatting. This did do the trick but I wasted a lot of time once again rebuilding the removable hard disc into the start-up volume.

7th January 1991

After patiently waiting over the Christmas holidays I telephoned Computer Capability who informed me that the Hard disc had gone to that great big computer in the sky. Their diagnostic software confirmed what my ears had told me and a mechanical fault that could not be repaired unless I wanted the drive returned to the manufacturer. This was the first time that I realised that Qisk are a 'value added' distributor. Hard discs, for the uninitiated, are hermetically sealed which to the lay person means that they are air tight and sealed in the factory in strict clean air conditions. Opening them up in the dirty atmosphere that the rest of us manage to survive in will deliver a mortal blow to their operation. This is because the disc head actually 'flies' just above the disc surface and does not actually touch it. Particles in the air small as individual particles of cigarette smoke will get between the head and the disc and act as sandpaper. This is at variance with the floppy drive in the front of your Mac in which the head is in constant contact with the disc surface. So Computer Capability could not actually repair the disc which I was informed was an out of date 5:1/4' diameter drive. So I was offered the choice of a trade in on a new or reconditioned drive. The reconditioned drive was guaranteed for 3 months whilst the new drive was guaranteed for a year. I bit the bullet and plumped for a new drive at a trade in price which added a little sugar to the bitter pill. One consolation was the new 3:1/2' drive has a 75Mbyte capacity as opposed to my deceased drive (RIP) which was 65Mbytes.

So be warned that some of these companies cannot repair the hard disk drives unless they are returned to the manufacturer (in this case Rodime). If the unit is out of guarantee and you really want the drive repaired then return the drive to the original manufacturer. However be also warned that the first thing a manufacturer will do is reformat the drive. SO KEEP BACKUPS (I know that this is repeated continually but like road safety needs to be). If you don't know the original manufacturer of your hard disk drive then get the Control Panel device called SCSI Probe which will tell you.

8th January 1991

At last my new hard disc arrived by special courier but due to a social engagement I could not install it that evening and had to endure the frustration of waiting for a day before I could get up and running again.

9th January 1991

I discovered that the new hard disc had been supplied minus any fitting instructions. However as there are only two electrical connections both very different from each other I had no difficulty in figuring out what went where. Soon I was up and running again. The first thing I did was retrieve my standard start-up configuration from the removable hard disc archive file. This duly done I was now fully operational once more. The only question Remaining was how long before the next hard disc crash and how could I alleviate some of the trauma. Regular back up's are of course a necessity and to this end I

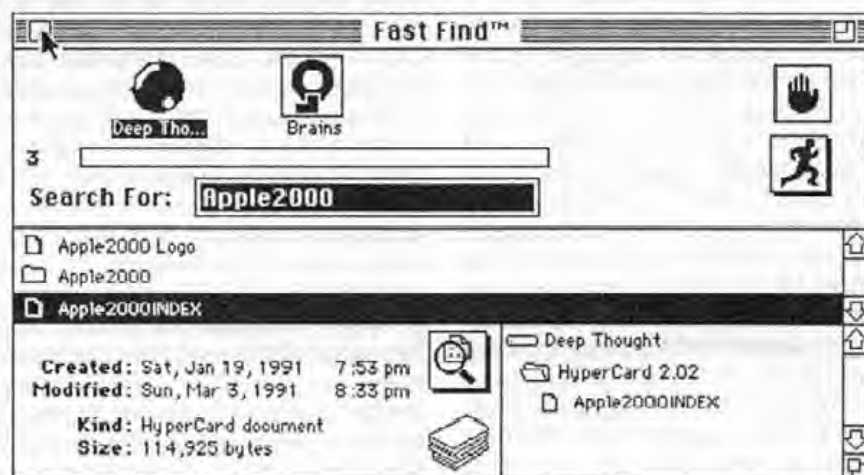


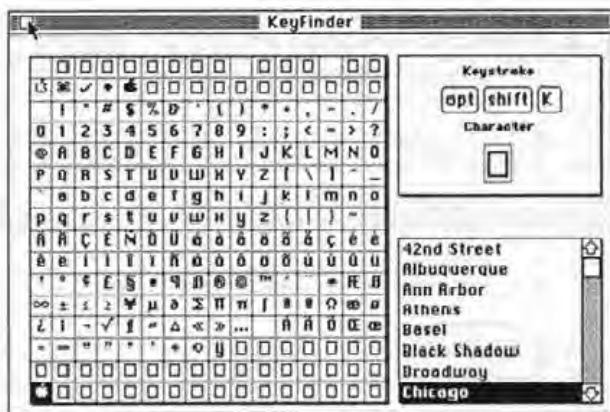
purchased Redux many moons ago. That can only make backup's less tiresome but cannot help to recover a crashed disc of any data that has been saved since the last backup.

One thing struck me was the need for some de-fragmenting software so I turned to John Kishimoto's review of DiskExpress in the December Apple2000. By rationalising the organisation of the hard disc the head should do less shuffling around and hence I reasoned, less mechanical wear would result. This in turn should increase the life of my sparkling new hard disc.

Next I pondered on the software around to help me to recover from a hard disc crash. There appeared to be two major programmes on the market, SUM (Symantec Utilities for Macintosh) and Norton Utilities. After reading a brief review in MacUser (why are most of the reviews in MacUser brief?). I plumped for the Norton utilities as it seemed to be the better value.

I know you're thinking, he's closing the barn door after the horse has bolted, and you would be right. However the object of this tale is a philosophical one and designed to help prevent you, dear reader, from the same fate. I found the Norton





utilities to be very good even if I'm a bit of a techno nerd when it comes to the inner secrets of the hard disc.

Norton Utilities.

The star disc of the three disc Norton Utilities package is the emergency disc which is coloured red for dramatic effect. This is a bootable disc with the Norton utilities and the system file and is not copyable due to the disc being stuffed to overflowing by the two files. These files are bigger than the free space of a normally formatted 800K floppy. So a backup cannot be made by the normal methods which is one small complaint I have. A backup can however be copied by using a bit copier such as Copy II+ although the manual does not tell you this. The other utilities disc is not so full and the programmes can be copied on to the hard disc including the Utilities Disc Doctor. Only the emergency start-up disc cannot be copied by normal means. This emergency disc is used when the Mac simply refuses to talk to a sick or damaged hard disc. It will enable, providing that the damage is not fatal, the copying of files/programmes to another disc be it floppy or hard.

Other facilities available include a complete format undelete. As the manual explains in layman's terms many formatting programmes for hard discs only rewrite the directory and track/sector information and in fact does not 'erase' all the data. I felt an acid test for this claim was worth trying. So having in my trials and tribulations reformatted my removable hard disc cartridge twice I let the Norton Utilities lose on it. To my amazement it very quickly read all the disc data and informed me that it had found some 1300 files! It then said it was deleting duplicate files and left me with

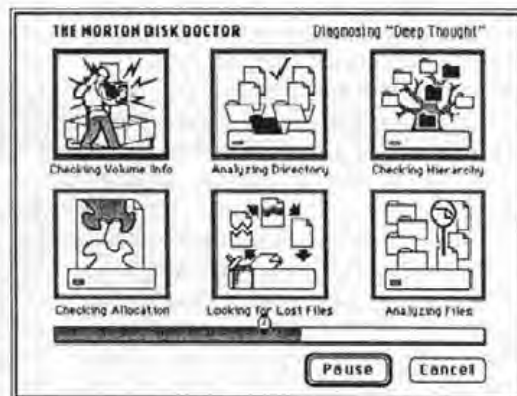
some 800 files to investigate. Many of these were given generic names such as HyperCard File.1,2,3 etc. Each of the files can be viewed from within Norton Utilities so that the content of the files can be determined. This can be tricky as a lot of programme 'chaff' is evident but there is usually enough of ASCII (i.e. letters and numbers) characters to enable the best techno nerd to identify files accurately. Through this I was actually able to retrieve some data I thought lost in a HyperCard stack. Interestingly an xCmd was lost from the stack but the data was intact. I was very impressed indeed although it must be said that once a section has been written over by new data the old data cannot be recovered by anyone or anything. Next I ran the disc doctor on my hard discs and let it check the volume information, analyse directory, check hierarchy, check allocation, look for lost files and finally analyse files. A report was generated under each heading detailing problems and offering to fix them. This is all done very well with plain English used and advice offered as to the severity of the problem as how urgent it is to attend to it. A half full 75 Mbyte internal hard disc takes only a couple of minutes to complete these tasks.

The Norton Utilities contains other useful bits and pieces which includes a disc activity indicator which is placed either to the extreme left or right of the finder menubar. This flashes a little hard disc icon (or floppy) whenever a disc is read. A even smaller 'W' is displayed below the icon when ever the disc is being written to. If like me you have an internal hard disc without an activity lamp on the case of the Mac then this little utility is very worthwhile.

Other utilities included with Norton Utilities are the 'LifeSaver' which is a control panel device. This is in effect a duplicate directory which is used by the disc doctor if the hard disc directory gets damaged. Norton utilities can use

its own file to rebuild a damaged directory. This rebuild includes all the information held in the 'Get Info' box obtained from the desktop icon by typing Cmd-I. Unfortunately I have discovered a clash between the 'Lifesaver' Cdev and 'Disk Express' Cdev. When Disk Express does a verification check or an optimisation of the hard disk the Mac locks up when the action is finished. With the aid of the DiskLight explained earlier I was able to see that the Mac was either continuously reading or writing to the hard disk. The only way out is a reset. As I feel that the disk optimisation is more important than the directory duplication I have disabled the Lifesaver Cdev as it's actions are contrary to it's name.

The list of goodies supplied does



not end here. There is, to coin a phrase, more. Two really useful desk accessories are supplied which are really improvements of Apples' standard supply. These are 'Fast Find' and 'Key Finder'. Everyone should know what these do and will appreciate how useful they are. What Norton have done is to speed up their operation and extend their functions. First let me deal with 'FAST FIND', naturally it does find files faster than the Apple version but it does offer one other significant advantage. Once the file which you are looking for has been found, clicking on it to highlight it and then clicking upon the magnifying glass button will open the file no matter what it is for viewing. This means that text is displayed in a readable form but applications (programmes to the rest of us) are presented in ASCII gobbledy gook. No matter, for checking quickly that the file is indeed the one you are looking for it is excellent. Oh, and when FAST FIND is looking for files a little man in spots strip runs on the spot to

show activity. A nice bit of relief from the boredom of the animated watch.

The second DA, the Key Caps replacement called KeyFinder is better in that it will display all the characters available in a selected font and clicking on a character will display the character in a magnified box with the keyboard equivalent so that you know which combination of keys will get that elusive Greek character without any trial and error.

The only section of the programme I have not tried is the hard disc de-fragmentation software. The reason is of course that I have Disk Express which examines what I use and arranges my hard disk to achieve optimum speed. The Norton utilities will only

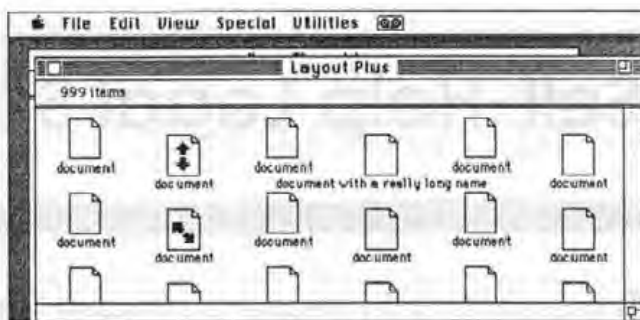
document. This is a bit of a Boomerang look-a-like but does not remember any of the files you have been using as Boomerang does. It will however allow new folders to be created from within open file dialogue boxes. Also files can

be listed in various ways in these dialogue boxes. For example folders can be at the top or bottom of the list. Files can be listed by date, size or name. File information can also be called up, this is a real boon if you are unsure of the files revision and have to open the document or file only to find out it is the wrong one. A quick file find feature is also for the asking without cancelling and going to the Find File DA.

Norton Utilities seems to do everything claimed and I have put it through its paces but not in anger (fortunately). I feel confident that when called upon it will do the best job in pulling me from the mire. In all I have been very pleased with its performance and with only the caveat of the Cdev clash with Disk Express I cannot fault it. I thoroughly recommend it as a well thought out package with utilities not only for the last resort emergency.

The manual

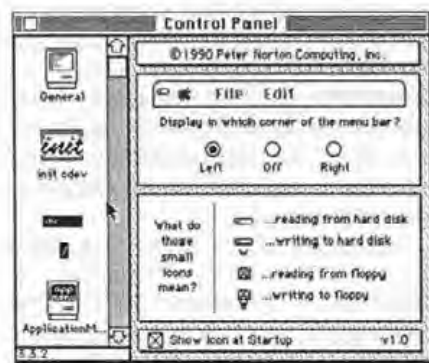
This is in plain English and assumes that the reader does not have a degree in computer science. The workings of hard disks and other facets of the operation of the Mac is very well explained and only the complete novice will have any trouble. This should not put off the technically backward as the entire package while not adhering to the Mac interface completely is still very easy to use. All warning messages I have encountered are in plain English and do not leave the user wondering what to do next. The options on discovering a problem are after a brief text explanation to simply fix now or cancel. If the fix now button is clicked a few moments later the reassuring message "Fixed" is displayed No drama or convoluted instructions. The only times it has been defeated was when (unexpectedly) it found a fault in the directory. After admitting defeat,



it suggested that I should run Apple's Disk Doctor to fix it. This I duly did and the problem was fixed. On another occasion it said that an application was possibly damaged and I should replace it from the master. I did this but the 'problem' did not go away but the programme runs OK. There must be something in these particular programmes' file structure that the Norton Utilities does not like. I confirmed this by running Disinfectant virus utility across my hard disc which confirmed my suspicions. These files work OK but they do show up as damaged due most likely to a non standard file format.

Conclusion

Norton Utilities is a collection of programmes for everyday use as well as emergencies. All are well thought out and I have found only the Cdev clash. The manual is well written and easy to comprehend. All in all a good package which is a good buy. The only omission is some virus detection programmes but then there are some very good offerings in the public domain. I would recommend Norton Utilities as a good buy for the good times as well as the bad.



defragment the hard disk when asked and does not do any analysis of what is frequently used. This is contrary to Disk Express which will automatically de-fragment any mounted disk every day it is used and user. However given the high standard of the rest of the programmes I do not doubt it will do its' stuff just as well.

Another application provided is called Layout Plus. This allows the user to define the font used by the Finder for file names, and the layout of the desktop. Above is the set up screen showing the offset in action. Dragging the document with the arrows in the direction indicated will allow the customisation of the desktop. Other facilities on offer are the forcing of the Finder to show generic icons for instance floppy discs. On my Mac II the floppy disc when entered does not show up on the Finder as a floppy but as a Mac II with the floppy drive in use indicated.

Another utility is Directory Assistance and is a start-up

info

Product : Norton Utilities
Publisher :
Available from :
 MacLine
 Tel: 081 643 4626

Price : £ 75.00

Value : ★★★★★
Performance : ★★★★★
Usability : ★★★★★
Documentation : ★★★★★

Self-Help Legal Software

Thoughts on the concept of self-help law by Stephen R. Elias.

The concept of self-help law was mostly unknown until 'How to Do Your Own Divorce in California' by Charles Sherman was published in 1971. Attorneys were quick to warn of impending doom.

"Beware," they said, "doing your own divorce is like doing your own brain surgery."

Eighteen years later, about 60% of all divorces in California are accomplished without a lawyer. And, good self-help law books are also available for such legal tasks as incorporation, modifying child support obligations, applying for a patent, collecting a judgment, copyrighting software, handling a simple probate case, preparing a living trust, and drafting a will.

Recently, computer programs have been published which let consumers prepare a will, form profit and non-profit corporations, and produce an array of business documents using their home computer. Expected soon are programs that will let people prepare basic personal contracts (such as promissory notes and home-repair agreements), durable powers of attorney, and personal bankruptcies.

As self-help law computer programs become more prevalent in the marketplace, consumers and reviewers need to know how to evaluate them.

"Does this particular will program really produce a valid will that will do what the will maker wants after he or she is dead?"

"If the legal area is tied to specific state statutes (such as incorporation, divorce and guardianship), are separate documents produced for each state?"

"How can a good product be distinguished from a bad one, the

wheat separated from the chaff?"

"Will a person get him or herself into trouble by relying on a particular self-help law program?"

These can be difficult questions for a consumer. Fortunately, some standards have developed over the past twenty years which, if understood, can help the consumer make an informed and intelligent choice about when to use self-help software, and which software to select.

Standard 1. The product must be well written, use common English where possible, and explain all legal jargon that can't be avoided.

It is important that the user of the product knows what he or she is doing when performing a legal task. This means the self-help law product must clearly communicate all necessary information and carefully guide the user through the task.

Standard 2. The product must break the task into a series of easily understood steps.

The secret of successful self-help law materials is to reduce the task or procedure being explained into sequential steps that the user can logically follow. Products which fail to deal with the law in this linear fashion risk user confusion, a no-no when helping people do their own legal work.

Standard 3. The product must provide specific instructions to the user for each step of the task.

All it takes is one unexplained step for a self-help law product to fail in its purpose. For example, even the entry of a person's name in a legal document should have instructions, since people commonly are confused as to whether to use birth names, married names, abbreviated names, nicknames, and so on. When

examining a self-help law computer product, pay close attention both to the on-screen instructions and the documentation that comes with them. These should provide adequate guidance for each entry field.

Standard 4. The product must provide sufficient information for the user to understand each step.

In addition to instructions for each step, the user should understand why he or she is taking each step. At all times, the user should be in control of the process and know why he or she is being asked to enter information or make choices. Again, in a computer program, this information must be provided in a combination of on-screen information and detailed written documentation. Look at the size and quality of the manual; it's normally not feasible to provide all necessary background information on screen.

Standard 5. The product must provide sufficient information for the user to understand when outside assistance by an expert is appropriate.

Virtually every step in a legal process involves a number of alternative choices. In routine matters, these choices can be made intelligently by an informed consumer. However there are always points in a legal process when you will need help beyond a computer program or book. Good products give you the facts and information necessary to identify these areas, and suggest specific ways to get needed help.

Standard 6. The product must contain the latest legal rules and information and be published by a company that understands its duty to keep its products up to date (the company should notify registered users of all updates).

Unlike many other products, self-help law programs must always be kept up to date because the law is constantly changing. Both the author and the publisher must be committed to this. A one-time publication of a legal program or book is by definition irresponsible. Therefore, look for a publisher with a strong background in the consumer or self-help law business, a reputation for close attention to quality control, and a track record for conducting an honest business. Also, look for a publisher committed

to providing legal (as well as program) updates for users who register.

Standard 7. The product must not attempt to deal generally with material that can only be handled on a state by state basis.

Many legal tasks are too state specific to be covered by a single program. For instance, the law governing what can be in a residential lease, a divorce petition, corporate Articles and Bylaws, or an adoption petition varies considerably among the states. Publishers who put out this sort of material without state-by-state explanations, forms and instructions are irresponsible almost by definition. However, some types of legal tasks are sufficiently similar from state to state to warrant a single program of national application (wills and bankruptcies for example).

Standard 8. The product's publisher must be willing to provide a complete refund if the program proves to be inappropriate.

A responsible self-help law publisher knows that its materials won't be appropriate for everyone, and that this fact is often discovered (and can reasonably only be discovered) after the materials have been purchased and examined by the consumer. Recognising this, the publisher should offer an unconditional money back guarantee for a reasonable time after purchase, no matter where the product was purchased.

[Stephen R. Elias is an attorney who authors and edits self-help law books and software. He can be contacted at Nolo Press, 950 Parker Street, Berkeley, CA. 94710-(415) 549-1976]

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AppleLink 6.0

Apple Computer UK Ltd have introduced a new version of its electronic mail service AppleLink (UK Edition). AppleLink 6.0 offers Apple™ Macintosh™ users additional features at the same price as the previous version - £95.

In addition to a redesign of the icon areas and the in/out baskets, there are a number of important new features designed to help productivity and facilitate access to information. Subscribers now have access to an address book which will allow them to search across all AppleLink account holders, the ability to 'delegate' or redirect their mail to another subscriber, and the ability to set up a 'personal area' where the subscriber can place all their most accessed information sources and icons such as 'AppleNews UK' or the 'Product Library'.

Since the introduction of AppleLink (UK Edition) in May 1990 there has been healthy interest from a number of Macintosh users. From the education sector, Ian Glen,

Adviser in Information Technology, for Lothian Region Education Department, comments: "At Lothian Apple Regional Information Centre we frequently use AppleLink and have found it to be an excellent resource. AppleLink provides information on new products from Apple and third parties as soon as they are announced. It is an efficient and economical service - much work can be completed off-line before connecting to the network, reducing the amount of on-line time. As an easy-to-use and valuable information source, I anticipate a much wider use of AppleLink by educationalists in the future."

Authorised dealers are also important AppleLink users. John Buckingham, operations director of SAMS Group Plc commented: "We have become keen users of AppleLink - it gives us prompt access to on-line information in the Apple community. We also use the system to perform complete business transactions, not only with Apple but with other suppliers and with a growing number of customers. Particularly useful to

us is the ability to transmit all Macintosh documents 'through a bucket in the Sky'. AppleLink costs £95. Connect charges start from 26p per minute using a 1200 baud modem to 44p per minute when connecting at 9600 baud. - ends - AppleLink 6.0 UK Edition For customer information dial 100 for Freephone Apple.

Features and benefits

- Easy to use interface.
- Bulletin boards: general Apple and third party communications and events.
- Reference libraries: information access - technical, product, service, support, and third party marketing.
- Discussion boards: provide areas for structured Q&A, technical support, and topic discussions.
- Electronic mail: sends messages or data files instantly to anyone on the network.
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- MultiFinder capability: send or receive files in the background while using other applications.
- Personal address book and many other features.

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LaserWriter™ LS

The announcement of the Apple™ Personal LaserWriter™ LS.

Personal LaserWriter LS

The Apple Personal LaserWriter LS is designed for individual use to produce both text and graphics, including scanned illustrations and photographs at a resolution of 300 dots-per-inch.

The compact size of the LS makes it possible to use the printer on a desktop. It has a built-in multipurpose tray that accommodates different sizes of paper and envelopes as well as labels and overhead transparencies. Optional cassettes are available for automatically printing up to 250 sheets of letter or legal size paper or 15 envelopes.

The Apple Personal LaserWriter LS is a ready-to-use model, requiring no additional cabling, interface cards, software drivers, or memory. Four TrueType font families are standard with the Apple Personal LaserWriter to allow printing of smoothly shaped high quality text in Times, Helvetica, Courier, and Symbol styles. Screen fonts are displayed in crisp, clear detail in any size.

Innovative software/hardware design technology supports printing of virtually any document and reduces the data to printer transmission time. The LS has a high speed communications interface and is equipped with a Canon LBP-LX laser-xerographic print engine.

The engine of the Apple Personal LaserWriter LS printer provides a minimum performance life of 150,000 pages per day, five days

per week, fifty-two weeks per year, for more than five years. The LS prints documents at up to four pages per minute.

The Personal LaserWriter LS produces text and graphics using QuickDraw, a language that is built into every Macintosh. The data compression and decompression technology of the LS enables operation as if the machine had up to 2.5 mega-bytes of RAM,

depending on the page being printed.

System Requirements

- Macintosh personal computer with at least 1 megabyte of RAM
- hard disk drive
- System software 6.0.7 or later

Technical Specifications

• The marking engine for the Personal LaserWriter LS is a Canon LBP-LX laser-xerographic engine which will run a maximum of four pages per minute. Actual speeds depend on the images printed. The LS provides automatic or manual paper feed with an optional feeder and paper cassette.

• The printer's controller is an application-specific integrated circuit (ASIC), containing 512K of RAM, and an RS-422 serial interface.

• Print quality is at 300 dots per inch for both text and graphics. The LS is equipped with Times,

Helvetica, Courier, and Symbol fonts in Apple's TrueType format. Regular, bold, italic, and bold italic styles are supported by the Personal LaserWriter LS. Additionally, the LS can support TrueType fonts from a variety of suppliers.

• An externally clocked high speed (909K) RS-422 serial interface is supplied. The LS supports background printing.


• Apple recommends 20 pound photocopy or typewriter bond (75 g/m²) to 28-lb. (105 g/m²) paper. Most letterhead and coloured stock paper can be used with the Personal LaserWriter LS. The multipurpose tray will store up to 50 sheets of paper or 5 envelopes. The optional legal cassette will accommodate up to 250 sheets of legal size paper. A second optional paper cassette will accommodate up to 250 sheets of 20 pound paper. The optional envelope cassette will hold up to 15 envelopes. For envelope printing, the multipurpose tray with auto-matic or manual feed may be used in

addition to the optional envelope cassette.

• The maximum printable line of the LS is 8.0" (203.2 mm). Minimum top, bottom, left, and right margins are 0.25" (6.35 mm).

• The LS has height of 8" (20.3 cm), width of 15" (38 cm), depth of 18.3" (46.4 cm), and weight of 31# (14.5 kg).

• A maximum of 600 watts at 115 volts of power are used by the LS. In the United States and Japan, 100 to 115 volts AC, 50 to 60 hertz are required. In Europe and Australia, 220 to 240 volts AC, 50 to 60 hertz are required. The LS operates at temperatures between 50F and 90F (10C and 32C).

Personal LaserWriter LS £825
Toner Cartridges £85
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StyleWriter™

The announcement of the Apple™ StyleWriter™ ink-jet printer.

Apple StyleWriter™

The Apple StyleWriter printer is designed for individual use, providing laser quality print at 360 dots per inch (dpi) while using thermal ink jet technology. The Image utility allows conversion of 300 dpi halftone images (PICT format) for printing at 360 dpi, which is the maximum resolution of the StyleWriter printer.

The StyleWriter works with any Macintosh and is an ideal companion for the Macintosh Classic, the Macintosh LC, and Macintosh IIx personal computers. This printer offers a printing alternative for users sharing a networked Apple LaserWriter printer.

No additional cables, memory, or interface cards are needed to use the StyleWriter.

The detachable sheet feeder automatically feeds up to 50 sheets. This printer can be used without the sheet feeder with front and rear manual feed options. The front and rear manual feed options simplify the printing of single sheet paper, envelopes, labels, or transparencies.

The user replaceable ink cartridge prints up to 500 pages of text and graphics. Apple's TrueType advanced font technology is incorporated into the package with Times, Helvetica, Courier, and Symbol font designs standard with each StyleWriter. Additional compatible TrueType fonts are available from other suppliers, including headline, text, symbol, and novelty designs.

TrueType, in conjunction with the Apple StyleWriter allows for production of documents containing equations and formulas. Virtually any type size and a wide range of styles can be used.

System Requirements

- Macintosh personal computer with at least 1 megabyte of RAM
- System software 6.0.7 or later

- This printer contains 64K RAM, with 8K used for buffer. An Apple serial interface is provided.

- Apple recommends 20-lb. cotton bond (75 g/m²), though the printer also accepts 16-lb. (60 g/m²) to 28-lb. (105 g/m²) paper.

The machine is capable of printing most letterhead and coloured stock. Labels and #10 business envelopes (9.5" x 4.125") may be used in addition to 3M brand CG3480 transparency film. U.S. letter, U.S. legal, and A4 paper sizes will fit the StyleWriter.

- The maximum printable line of the StyleWriter is 8.0" (203.2 mm). Minimum top, bottom, left, and right margins are 0.25" (6.35 mm).

- The StyleWriter has height of 12.5" (32 cm), width of 13.25" (33.6 cm), depth of 5.6" (14.2 cm) with output tray closed, and weight of 7.5# (3.4 kg).

- A maximum of 23 watts at 115 volts of power are consumed. A maximum

New StyleWriter

Technical Specifications

- The marking engine for the StyleWriter is a thermal ink jet which will typically run one-half page per minute. In draft mode, up to one page per minute is printed. The StyleWriter provides automatic paper feed with a detachable cut-sheet feeder. The printer is also equipped with front and rear manual feed features.

- Print quality is at 360 dots per inch (dpi) for text and graphics, and 180 dpi in draft mode, however, actual speed depends on the images printed.

The StyleWriter features regular, bold, italic, and bold italic type styles. Additional styles can be printed, depending on the application.

Additional TrueType fonts from Apple and other suppliers are supported by the StyleWriter. User-replaceable ink cartridges have a capacity of up to 500 pages.

of 25 watts at 220 volts of power are consumed.

In the United States and Japan, 100 to 120 volts AC, 48 to 62 hertz are required.


In Europe and Australia, 220 to 240 volts AC, 48 to 62 hertz are required.

The StyleWriter operates at temperatures between 59°F and 86°F (15°C and 30°C).

- The StyleWriter printer works with any member of the Macintosh family of personal computers that uses system software version 6.0.7 or later and a minimum of 1 megabyte of RAM.

StyleWriter £295 with ink cartridge and sheet feeder
Ink Cartridges £13

Apple Products New Apple Products
3/11/91

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InBox Plus 3.0

Information from Sitka Corporation on Mac to PC communications.

Sitka InBox Plus 3.0

Sitka InBox Plus 3.0 becomes industry's first e-mail system to operate on all-DOS, all-Macintosh, and mixed LANs.

With the addition of DOS-based system administration and routing software to its InBox Plus 3.0 E-mail software, Sitka Corporation have become the first company to offer a single electronic mail system capable of operating on networks comprised entirely of DOS-based PCs, Macintosh computers, or a combination of both. Sitka also announced InBox Plus 3.0 configurations capable of supporting 50, 100, or 250 users per server, the availability of additional gateways to other E-mail systems, advanced FAX server software, and capabilities for remote access E-mail.

While other electronic mail systems currently on the market can send and receive mail between DOS-based PCs and Macintosh computers, Sitka's InBox Plus 3.0 supports sophisticated system administration and message routers on both platforms. As a result, InBox Plus 3.0 is the only system that can provide complete, sophisticated electronic messaging systems on both homogeneous (all DOS or all Macintosh) and heterogeneous (DOS and Macintosh) PC LANs. It works over any file-sharing LAN.

"With the addition of the DOS router and administration software, InBox Plus is the only electronic mail system offering a single system architecture that operates equally well on both platforms," said Jim Green, Vice President of Sitka's Mail Business Unit. "Administrators of DOS-based networks now have an E-mail system they can use today while

planning for the addition of Macintosh computers tomorrow."

InBox Plus 3.0 Configurations

Three new InBox Plus 3.0 configurations will enable DOS-based PCs to set up and administer InBox Plus 3.0 message servers and route mail to other servers on the network, allowing InBox Plus to be used on a LAN of all DOS-based machines. Each server is capable of supporting up to 50, 100, or 250 users. Two new Macintosh-based systems will support 50 and 250 users on a single message server in addition to the 100-user system currently available. Both types of servers support Mac and DOS mail users. "Now, with the 50, 100, and 250-user configurations, you can buy only as much of an E-mail system as you need," said Green, "while still getting the most sophisticated, lowest cost-per-seat electronic mail system available."

Sitka also added the ability for InBox Plus users to maintain full InBox functionality when disconnected from the network, a feature costing as much as \$300 per user on other E-mail systems. Whether working at home or travelling with a portable computer, these connectivity features allow reading and responding to mail, creating new mail, and queuing up messages for transmission when the system is reconnected to the LAN.

FAX Servers

New DOS- and Macintosh-based FAX servers, also announced, provide seamless transmittal of word processing and graphic documents. The FAX servers provide a cost-effective means of providing FAX capabilities to every network user without requiring a

FAX machine at every desk. Developed in conjunction with Alcom Incorporated and Solutions, Inc., recognized leaders in network document communication technology, the InBox Plus FAX Servers accept text and image files enclosed with InBox messages and translate them into FAX format for sending. Cover-sheet generation is automatic, as is dialing, establishing communications, redialing busy FAX numbers, and notification. FAXes can be both sent and received by the FAX servers.

In addition to two-way document communication with any Group III FAX machine, special features include scheduling of outgoing FAXes for reduced telephone charges, automatic server restart (after power failures), "busy buster" redialing, confirmation notices automatically sent to sender's mailbox, activity logs, multiple cover sheets, and multiple FAX board support for high-volume applications.

Two versions of the FAX servers support single or multiple message centers. The single message center version allows users from a designated message center to send and receive FAXes. The multiple message center version lets any InBox client on the network access the FAX server.

Four New Gateways

Sitka has expanded the connectivity of its InBox Plus system with the availability of four new gateways — X.400 from Touch Communications, VMSmail from Joiner Associates and Alisa Systems, and MHS gateway from StarNine Technologies Inc. — adding to the X.400 and SMTP gateways previously announced. The gateways enable Sitka's InBox Plus users to seamlessly send and receive electronic mail messages with mainframe- and minicomputer-based corporate E-mail systems, as well as a broad range of public electronic mail systems around the world, just as they would to other InBox users.

"Sitka is committed to delivering the broadest and most comprehensive set of electronic mail gateways in the industry," said Rich Shapero, President of Sitka. "Our Fortune 500 network customers

have identified gateways as a critical requirement for their networks in coming years. We intend to meet this need with the gateways announced today, and in the future with additional gateways as new standards emerge in the E-mail market."

Joiner Associates' Jmail-InBox (JMI) is a VAX-resident, software-only, electronic mail gateway giving users of InBox Plus and VMSmail the ability to exchange mail in a convenient, fast, and totally transparent way. To the InBox user, the JMI gateway on the DEC VAX appears to be another message center. To the VMSmail user, the JMI gateway can be made to appear as another node on the network through the use of a VMS logical name.

Alisa Systems has added InBox Plus 3.0 to its family of MailMate VMSmail gateways. MailMate can tie together InBox Plus message servers using an existing DECnet network, and when used with Digital's Message Router/MailBus services, InBox Plus users can communicate with All-In-1, IBM PROFS, X.400, and other systems supported by MailBus.

Touch Communications' Worldtalk 400 X.400 gateway allows InBox Plus users to exchange messages with any other messaging system supporting the X.400 international standard for messaging and electronic mail. With X.400 quickly becoming the preferred technology for the development of enterprise-wide mail networks, the Touch Worldtalk 400 gateway provides the vehicle for integrating InBox users with the corporate messaging system.

StarNine's Mail*Link MHS gateway connects InBox Plus systems to the more than 40 applications and E-mail systems using MHS (Message Handling System) architecture, including DaVinci Mail, Action Technologies' Coordinator, and WordPerfect Office. Mail*Link supports InBox Plus' and MHS' ability to transfer binary and text files as enclosures (attachments), preserving all formatting.

"These announcements demonstrate Sitka's determination to continue to evolve InBox to meet the needs of our customers," said Green. "The additional capability to administer the InBox Plus system

and route mail from DOS-based PCs, the new gateways and FAX servers, and full-function support for off-line computers extend the reach and enhance the flexibility users need for truly heterogeneous systems."

InBox 3.0 AND InBox Plus 3.0

Sitka, a pioneer in PC-to-Macintosh communications, established the first network allowing the two systems to share data and peripherals. Now Sitka has taken a major step forward in improving network communications with the introduction of InBox and InBox Plus. The InBox products are second-generation electronic mail systems that provide the industry's first complete solution, from entry-level work groups to enterprise-wide and global networks consisting of hundreds or thousands of users. InBox 3.0 is an entry-level, work group electronic mail system providing convenient, fast and reliable communication of messages and files between PC and Macintosh users within work groups of up to 20 users. InBox is easy to use, and eliminates the need for central administration. The server — or message center — is easy to install on a PC, a Macintosh, or any other system accessible through a network, including minicomputers and mainframes.

For organizations with more demanding electronic mail applications, there is an easy and seamless upgrade to InBox Plus 3.0. By permitting multiple Message Centers of up to 250 users each, and true store-and-forward communications between message centers for connectivity across departments or an entire enterprise, InBox Plus 3.0 is a flexible and comprehensive solution for personal computer networks. In addition, InBox Plus 3.0 can provide world-wide connectivity through gateways to mainframe- and minicomputer-based mail systems. These include PROFS, UNIX Mail, All-In-1 and VMS Mail; virtually all public mail systems; and other LAN-based mail systems.

A complete messaging system

Each InBox package provides all the software needed to set up a full-featured electronic mail system. The basic InBox system consists of four components:

- * Client software (Mac and PC — both are included)
- * Message Center
- * Mailbox for each user
- * Storage Boxes
- * Administration Software (Mac or PC)

Client Software

InBox provides two predesigned forms for creating mail: an interoffice memo form, and a telephone message form. Text can be entered using the InBox editor or imported as an ASCII file from most popular word processors. Mail is easily addressed by selecting names from user lists, centralized distribution lists, or personal address books. On larger networks with multiple user lists, user mailboxes can be searched for by name. With either type of form, the sender has the option of enclosing one or more files along with the message. These files can be anything from word processor text files, to spreadsheets, to programs or graphics. If desired, a return receipt will notify the sender that the mail and enclosure has been read. After a mail message has been read, a reply can be sent to the sender only, to all addressees, or forwarded to other mail users. The mail message also can be printed or deleted, or saved in user-defined local storage boxes.

Mailbox

Every InBox user has a mailbox providing two kinds of mail management. First, incoming messages in the mailbox can be sorted by date, subject or sender, and these messages can be filtered. For example, to list only those messages from Bill Smith. Second, mailbox messages can be saved for easier retrieval later in user-defined storage boxes.

The mailbox holds mail messages indefinitely until the mail is read and deleted or moved into a storage box. Mailboxes also can be password protected. In addition, public mailboxes can be established and accessed by any user, providing a convenient way for department or team members to discuss common issues in an open forum, much like popular bulletin board systems.

Message Center

Although the information a user reads in a mail message appears to

reside on his or her own computer, it is actually stored in the user's mailbox on another computer on the network. The Message Center contains these mailboxes, as well as address information for all users on the system. The Message Center receives the mail a user sends and either stores it in the recipient's mailbox, or places it in a mailbag to be sent to another Message Center that contains the recipient's mailbox. An InBox Message Center can contain up to 20 mailboxes, while an InBox Plus 3.0 Message Center supports 50, 100, or 250 mailboxes.

InBox Plus 3.0 expands the system to provide a true store-and-forward messaging system, exchanging mail between multiple message centers through the use of routers, and connecting to other mail systems through the use of gateways. Store-and-forward systems allow users to send messages even when the recipient's Message Center is unavailable (due to maintenance or backup procedures, etc.), or when connecting to a remote system. If, after a predetermined time, a message cannot be delivered, InBox Plus 3.0 will return the message to the sender with a note that it was undeliverable. The routers are flexible enough to support multi-hop message delivery and redundant, fail-safe routing paths.

Storage Boxes

Any mail system offering its users mail management encourages users to save their mail for extended periods. Therefore, it is critical that the users' personal storage be kept off the mail server because of the increased storage demands and performance degradation this would otherwise cause. InBox allows users to create their own storage boxes where they can organize and store their messages. Like a mailbox, storage boxes allow a user to list messages, sorting them by date, subject or sender. Unlike mailboxes, however, storage boxes are located elsewhere on the network — either locally or on a file server — for quick retrieval, reducing the storage (i.e., hard disk) needs of the Message Center, and improving system performance.

A flexible electronic mail system

InBox has the flexibility to operate

across the platforms for which TOPS, Sitka's file-sharing software, is famous. With PC and Macintosh computers dominating today's desktops, connectivity between these systems is essential, and InBox takes it further than any other electronic mail system.

Flexible Servers

While it goes without saying that users of both PC and Macintosh computers can access mailboxes on their Message Centers, InBox also allows the Message Center to reside on a PC or Macintosh. In fact, the Message Center can be located on any computer on the network, including DEC VAX minicomputers and Unix-based machines, provided that they are available through the network's file-sharing system.

This also allows the mail system to benefit from the performance and security features of larger systems on the network while maintaining the flexibility and ease of use of a personal computer-based mail system.

Multiple Network Operating Systems

InBox is also flexible in its ability to run on virtually any network supporting file-sharing, taking full advantage of high-speed network hardware and massive storage systems. These include networks operating under Novell NetWare, 3Com 3+, and Microsoft LanManager, as well as TOPS and AppleShare.

At the same time, InBox has the unique ability to run on an AppleTalk or compatible network with no network file-sharing system. InBox contains all the software necessary to take advantage of the AppleTalk protocols in every Macintosh computer and transmit data from one node to another without additional file-sharing software.

Scalable Growth to Enterprise-Wide Solutions

InBox provides the flexibility to grow with users' needs. InBox offers a work group-size mail system for up to 20 users that installs quickly and easily, and can be administered by each individual user. When more users need to be supported, or when gateways to external mail systems are required, InBox Plus

3.0 provides the ability to exchange mail between multiple message centers of up to 250 users each, and can connect to a vast array of mail systems through gateways. While InBox Plus 3.0 offers these advanced features, and more, the interface each user sees is unchanged, making the transition painless.

Easy to install and maintain, Sitka has designed the InBox user interface to make the software easier to use. With InBox 3.0 and InBox Plus 3.0, the most commonly used, basic functions are easily recognized by even first-time users. The overall intuitive nature of the products enable users to access or "discover" even the most advanced capabilities. A personal computer user need only "point and click" to send messages and files to any other user on the network. Retaining the design for which InBox is known, version 3.0 of InBox and InBox Plus 3.0 add powerful new features to increase productivity.

The "client" software in InBox is not serialized, greatly simplifying installation and administration. There's no need to keep track of serial numbers when adding or removing users from the system. This provides greater flexibility in hardware use and software updating.

The operation of InBox on the PC and Macintosh is virtually identical, making it easy to access mail from any computer on the network. A graphical interface, pull-down menus, dialog boxes, sizeable windows and point-and-click operation make InBox easy to use — even for novices. Personal address books let users organize lists of people to whom they frequently send mail. With personal address books, users see only the list of people from which they want to select, not the entire company. There's no need to scroll through a long list just to find the few names needed. Any number of personal address books can be created for departments, work groups, product teams, clubs or any group of people that gets mail regularly. Lists of all mailboxes on each message center are always available.

InBox Plus 3.0 also offers a feature for creating distribution lists for company-wide routing. Distri-

bution lists help to organize company-wide mailings the same way personal address books help organize personal mailings. The InBox Administrator can create a distribution list for every department in a company, even if the members are on multiple Message Centers. When a user needs to send a memo to all of engineering, it won't be necessary to know every name and every Message Center in which the mailboxes are located.

Storage boxes let users organize drafts and incoming mail. Storage boxes are special files created on the user's local disk drive or on a file server located elsewhere on the network to save mail in InBox format for quick retrieval. Storage boxes also reduce the storage requirements of the Message Center. Any number of storage boxes can be created to categorize mail as needed.

Worldwide connectivity

InBox Plus 3.0 offers the most comprehensive collection of gateway products available to extend the reach of corporate mail systems. InBox Plus 3.0 gateways enable users to access electronic mail systems and exchange messages on mainframes and minicomputers, such as IBM PROFS, DEC All-In-1 and VMSmail, SMTP-based mail on Unix, and MHS systems. The gateways also bring the full power of public mail systems around the world to the users' fingertips.

FAX Servers

Sitka's newly introduced FAX servers provide users with cost-efficient FAX capabilities for everyone on a network without requiring a FAX machine on every desk. The FAX servers were developed in conjunction with Alcom Incorporated and Solutions, Inc., recognized leaders in network document communication technology. InBox Plus FAX Servers accept text and image files enclosed with InBox messages and translate them into FAX format for sending; automatically taking care of cover sheet generation, dialing, communications, retries, and notification.

System requirements

Computers Macintosh Plus, SE,

SE/30, Macintosh II family. Compatible with all Apple-supported system software from System 4.2/Finder 6.0 through System 6.0.7.

IBM PC, XT, AT or compatible machines, PS/2 Model 25 or higher, Compaq 386 and compatible DOS-based 80386 machines with a minimum of 512K memory (640K recommended). DOS 3.1, 3.3 or 4.01. DOS 3.3 or higher is recommended for international users. Microsoft Mouse or compatible (optional).

Network options

AppleTalk-Based Networks

InBox 3.0 and InBox Plus 3.0 require no additional network operating system to function on AppleTalk-compatible networks. They will operate over LocalTalk or Ethernet cabling.

When used in this manner, the InBox or InBox Plus 3.0 Message Center and InBox Plus 3.0 Router must reside on a Macintosh computer. InBox 3.0 installation and administration may take place from either a Macintosh computer or PC. InBox Plus 3.0 installation and administration must take place from a Macintosh computer.

File-Sharing Networks

InBox 3.0 and InBox Plus 3.0 are compatible with the file-sharing mechanism in most popular networks, including TOPS, Novell NetWare, AppleShare, 3Com 3+, Microsoft LanManager and networks that support DOS 3.1 and higher.

An InBox 3.0 or InBox Plus 3.0 Message Center may reside on a Macintosh computer, a PC or any other type of file server. InBox installation and administration may take place from either a Macintosh computer or a PC. The InBox Plus Router, however, must reside on a Macintosh, and InBox Plus 3.0 installation and administration must take place from a Macintosh.

About Sitka

Sitka Corporation was formerly known as TOPS.

For pricing and availability contact: Lisa Ping, Sitka Corporation, 415/769-2496 or Carol Wentworth, Copithorne & Bellows, 415/541-0873

ConvertIt! HyperCard to ToolBook Conversion Utility

Heizer Software has begun shipping ConvertIt!, the Hypermedia File Format Converter. ConvertIt! will allow users of Asymetrix ToolBook application to convert HyperCard 1.x stacks into ToolBook format.

ConvertIt! will greatly aid in the conversion of the vast number of HyperCard stacks for use in multi-platform environments, said Ray Heizer, President of Heizer Software. ConvertIt! is already being used to convert many of Heizer Software's more popular HyperCard stacks into ToolBook books, Heizer continued.

The HyperCard edition of ConvertIt! exports stacks into an intermediate file format called HIFF* (Hypermedia Interchange File Format*). HIFF files can be easily moved to the Microsoft Windows* 3.0 graphical operating environment via modem, direct connection, networks such as AppleShare(), or by diskette. Once on the Windows platform, the ToolBook edition of ConvertIt! imports the HIFF file and builds a new ToolBook book. HyperTalk scripts (the programming language in HyperCard) are translated into OpenScript (the programming language in ToolBook) during the importation process.

ConvertIt! can be used by ToolBook developers in several ways:

- % To translate complete HyperCard stacks to run in ToolBook.
- % To reconstruct all or some user-defined subset of the objects in a HyperCard stack under ToolBook to facilitate the reproduction of an existing stack's structure and look.
- % To translate HyperTalk code into OpenScript to save time and expense in rekeying and translating algorithms by hand.

% To port bitmaps and icons from a HyperCard stack into ToolBook as ToolBook paintObjects.

ConvertIt! is a great utility for people who have an investment in HyperCard stacks and want to broaden their market potential. It is well suited for those who need to support multi-platform environments, stated Steve Wood, Asymetrix Vice President.

According to The HyperMedia Group (developers of ConvertIt!), since ToolBook and HyperCard are dissimilar environments with different languages, object types, and features sets, ConvertIt! generally performs an 80% or better conversion.

Many stacks contain External Command resources (XCMDs) which are similar to Dynamic Link Libraries (DLLs) under Windows 3.0. XCMDs and other resources are machine dependent, and as such, cannot be directly translated into a form usable by ToolBook. Also, certain elements of the HyperTalk language cannot be directly translated into OpenScript due to differences in the feature sets of the two products. Currently, ConvertIt! recognises features of HyperCard available in version 1.2.5. An upgrade is planned for the 4th quarter, 1990 to support HyperCard 2.0 features. After conversion, most developers will want to take advantage of ToolBook features like colour, DDE, draw graphics, etc. which are not available in HyperCard.

ToolBook is a software construction set that allows users of IBM PC and compatible computers to quickly develop applications addressing the business, education, and multimedia markets. The product currently runs under Windows 3.0. HyperCard is a similar software construction set bundled with every Macintosh computer since late 1987.

The Heizer Software catalogue currently contains over 1500 programs from over 250 authors. Working in the Macintosh, Microsoft Windows, and OS/2* environments, Heizer's authors have developed stacks, templates, and books for Microsoft Excel and Works, HyperCard, ToolBook and SuperCard*. Other products in the Heizer Select Series include: CompileIt! The HyperTalk Script Compiler, RecordIt! The HyperTalk Script Recorder, and Best Answer (a linear optimisation tool for Microsoft Excel).

System requirements:

HyperCard 1.2.5 or higher from Apple Computer, Inc. and a Macintosh computer with 2 megabytes of RAM; and the full version of ToolBook 1.0 or higher from Asymetrix and a 286 or 386 based PC with 2 megabytes of RAM.

Availability:

Retailing for \$199, ConvertIt! is part of the Heizer Select Series and as such, is available both through the Heizer Software catalogue and through dealers. ConvertIt! is available now.

For more information on this product or to request a free copy of the Heizer Software catalogue write to: Heizer Software, P.O. Box 232019, Pleasant Hill, CA 94523 or call 800-888-7667 (orders only) or 415-943-7667.



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Hypermedia: The Multiple Message

Development Opportunities on the Macintosh by Craig Ragland. Part 1 of an article in two parts.

Hypermedia is a new form of software that blends information of different forms with high levels of user control. Unlike most software, the production of hypermedia is limited less by technical expertise or programming skills and more by access to data and design abilities. This offers significant opportunities to developers of widely different levels of sophistication. The technically naive can focus on assembly of information, while advanced programmers can extend available delivery environments, create new environments, and add the concepts and power of hypermedia to other classes of applications.

Hypermedia is likely to encompass many existing media types and escape the bounds of "computers". It seems an appropriate method of managing personal, business, and entertainment data. If adopted in near future homes and businesses, it will have the largest market of any existing form of software.

Hypertext, Hypermedia, and Interactive Multimedia

Ted Nelson, coiner of the term, defines hypertext as "non sequential writing". Hypertext is any form of writing or reading which is done non-sequentially or non-linearly. This includes the common practices of writing on index cards, gathering notes on different articles, or taking a telephone message. Reading examples are more obvious; you read non-sequentially when you use a phone book or an encyclopaedia or cookbook or a newspaper— you dip into a highly structured document to grab the little chunk of information you

need or find of interest. Such paper-based hypertexts force readers to either use lots of steps to locate the desired information, or to follow known, arbitrary conventions (such as alphabetical listings or pagination rules).

Many writers (principally those in the popular press) have tried to narrow the idea of hypertext, restricting it to "a collection of text nodes connected by links". Nelson rebels at these restrictions, stating that many are "over-simplifying it and over-restricting it. Hypertext is non-sequential writing of any kind with links of any kind". The restriction of the concept has been fuelled by the widespread use of HyperCard, which tends to reinforce the linked-chunk model of hypertext. There are alternative hypertext and hypermedia models which may prove more powerful and popular — more on this later (since this is a sequential document and your author controls your access patterns).

Hypertext, or non-sequential writing, additionally makes a basic requirement for reader interaction not present in sequential text. Readers or users of hypertexts make a series of decisions to determine which material is accessed. These decisions require greater cognitive overhead than simply reading sequentially down a predetermined path of linear writing. As hypertext creators, we let readers determine what they read next, instead of assuming they will follow the flow of our linear writing. While these decisions provide enhanced control over the reading experience, the added overhead can also be annoying. Adding lots of decision points may have profound impact on the type of written materials appropriate for

delivery via hypertext. It is unclear, for example, that very many novels with distinct plots and sequential time frames would benefit particularly from free-form, non-sequential access. On the other hand, it would add value to a book review, if the commentary was linked to specific points in the subject work. Non-sequential fictions might also constitute an exciting new art form.

Hypermedia extends the concept of non-sequential writing by adding graphics, sound, animation, video, and any other expressive medium. Apple Computer generally uses the phrase "interactive multimedia" in place of hypermedia. This helps emphasise the importance of human interaction in controlling the flow of multiple forms of data. It also avoids the all-too-easy suggestion (or accusation) that "hypermedia" is mere "hype".

Just what is sequentiality, and is it inherently good or bad? It could be argued that our experience of life is entirely sequential. There is a constant stream of information impinging on our senses, all of it linear, at least along the time domain. However, as data is encoded in the brain it loses this linearity. Brain science suggests that separate ideas, images, and feelings are stored throughout the brain in widely disparate regions. This data is subsequently accessed simultaneously via different neural networks. Some have emphasised this apparent similarity between non-sequentially organised information and brain architecture/function. However, the particular benefit of structuring information using neural models is obscure at present.

So does hypermedia just present a number of choices at any given instant? No. For most hypermedia designers, it additionally requires higher levels of organisation, integration between choices, and some depth of user control. For example, existing commercial television offers a number of choices of stations at any instant. Television, however, offers no higher level of organisation (other than channel assignments by FCC or your local cable company). Current-day television offers

virtually no integration between the competing programs. Finally, the depth of user control over their individual data stream is limited merely to selecting between alternative hard-wired, linear programs. While remote controls let us ZAP commercials, all we are doing is flipping from what one company wants to sell us to what a different company wants to sell us. How might this most pervasive of media forms be made into hypermedia? —more on this later...

Is sequentiality going to disappear as technology increases our abilities to work non-sequentially? Absolutely not. Many people absorb step-by-step sequential instructions more easily. Such "how to", cook-book approaches work and they will not disappear. In addition, some forms of writing (such as argumentation or plot dependent stories) probably benefit from linear progressions. At present, very little evidence exists on how linearity affects the user's perception, ability to learn or to access information. Furthermore, little is known about the impact of enhanced interaction with information. Do higher levels of interaction improve retention? Hypermedia has leaped into the commercial marketplace too quickly for academic research to respond. However, these issues are now being widely studied.

Future Hypermedia Development

Hypermedia developers come in a multitude of flavours, but there are two basic classes: (1) those who work on creating development systems—System Developer—and (2) those who work within the development systems of others—Hypermedia Developers. As you will see, these categories overlap for extensible software development systems like HyperCard.

At the present time Apple's HyperCard is the only hypermedia development system with a significant market penetration (1 million+). There are alternative development environments, on the Mac and on other platforms, but none of these offer large installed bases of informed consumers. This means that companies must sell a particular hypermedia delivery

system in addition to selling a particular product or project. At the present time, none of the competing programs offer development environments as rich as HyperCard. Also HyperCard includes the embedded language HyperTalk, which gives it a distinct advantage in flexibility. This does not mean that hypermedia development opportunities on the Mac are limited to HyperCard stacks. Indeed, HyperCard is not the final word in Hypermedia and there are many opportunities for application development.

At least three areas of technological and market development are of great importance to hypermedia developers:

- The imminent release of alternative development systems for the Macintosh and other microcomputer systems.
- Multi-user hypermedia systems that allow multiple access and development of a common dataset.
- Invasion of the home market with optical media-based interactive technologies.

Alternative Development Systems

Several companies intend to deliver alternative development environments on different microcomputers. On the Macintosh, existing alternatives that might be labelled hypermedia include Macromind's VideoWorks Interactive™, AuthorWare's Course of Action™, OWL International's Guide™, and EastGate Systems' HyperGate™. In addition, there are persistent rumours of to-be-announced HyperCard-compatible or HyperCard-like PS/2 hypermedia systems. Rumour also has Apple soon to announce an Apple IIGS version of HyperCard. Developers are known to be working on HyperCard-like systems for the Amiga. Some rumours involve extremely large software publishers and hardware manufacturers. Representatives from one company, for example, were anonymously recruiting HyperCard developers for PS-2 development at the recent HyperExpo in Boston.

If you are a system developer, these competing systems are of critical importance. You need to

inform your own work, in part by carefully analysing the work of others. If you are a hypermedia developer, you should carefully attend to alternative systems which might allow an inexpensive expansion of your market. While traditional software developers (what an odd notion for such young industry!) must focus primarily on the technical aspects of implementing a complex system, hypermedia developers attend more to integrating various forms of data and structural design. Apple would certainly prefer the Macintosh to remain the only viable system for delivering hypermedia data. Hypermedia developers, however, must carefully consider all of their options—while Apple has a great image, it is known to destroy small developers through minor product changes or releases. As data interchange formats develop, the porting of hypermedia data and structures will be trivially easy, and any company not selling hypermedia software for multiple delivery environments will be at a competitive disadvantage.

Multi-User Hypermedia Systems

Hypermedia development systems that support multiple simultaneous users will be very significant. Quite simply, people tend to work, learn, and play in groups instead of as solitary individuals. This is true in virtually all existing markets. In the corporate community, the winning technology improvements will increase the productivity of work groups and departments as a whole, as opposed to just the individual worker. In the education market, it addresses the basic fact that groups of students interact with teachers and each other. Educational experiences which involve other thinking people are richer than solitary study. Individual knowledge workers will also benefit by increased access and ability to use others' work more directly. This article, for example, would be dramatically improved if all the other researchers and hypermedia developers in our widely distributed community could contribute their comments.

System developers have two

alternatives regarding multi-user development systems:

- Extending existing systems.
- Creating new multi-user systems.

The release of HyperCard version 1.2 added read-only, multi-user access to a stack which is mounted in an AppleShare folder. At least two significant extensions to HyperCard add read-write, multi-user capabilities. These are HyperCom™ by GAVA, Inc, which does a very nice job of adding AppleTalk™ communications abilities to HyperCard, and Oracle Corporation's addition of HyperCard XCMDs, which let a developer create hooks into an Oracle database.

GAVA has created an AppleTalk Driver which takes care of most of the trivial details of AppleTalk, allowing the developer of a HyperCard-based product to convert it fairly easily into a multi-user system. This is significant for many educational products as well as business-oriented systems. GAVA includes a multi-user address book with HyperCom which illustrates an immediate practical application, allowing more than one user to share the common address data.

Oracle is the most commonly used mainframe and minicomputer data base system in the world. Using Oracle Corporation's new HyperCard XCMDs, companies will be able to add HyperCard-based front ends to their existing data bases. This lets effective interactive designers create highly customised and easy-to-use front ends for different roles within a company. A shipping clerk who has finished processing a particular package might pick up an icon representing that package and move it to an Out Basket. The clerk's direct manipulation of that graphic representation would report that step to a centralised data base running on a Mac or other machine. (By the way, the same thing could be accomplished for smaller organisations using HyperCom along with HyperCard.)

System developers should also consider designing new hypermedia systems for multiple users. HyperCom-enhanced groupware products using HyperCard face all the traditional

design problems of multi-user database systems, including record vs. field locking, network traffic issues, and other very basic multi-user design constraints which are built in to most multi-user products.

Hypermedia developers interested in creating multi-user hypermedia data spaces face numerous interesting problems. Should all users have equal access to all data? Should private data be allowed in the system? Can anyone come along and change "your" data, or are they restricted to linking to "your" data? The degree to which these questions are addressed by the system designers will inversely determine the flexibility and difficulty for hypermedia developers.

GAVA's HyperCom and the Oracle hooks also exemplify another class of hypermedia-related developer. Are they system developers or hypermedia developers? Both are adding new, system level capabilities to HyperCard. There are several other XCMD-oriented products which fall into this class, by adding new, basic abilities to HyperCard. These include "101 Scripts & Buttons for HyperCard™" published by Individual Software (which adds several basic user interface extensions, and was created by the author of this article), HyperPress's "Icon Factory" (which lets developers more easily create ICON resources), Farallon's MacRecorder (which lets developers add digitised sounds to their stacks), etc.

The Home Market

The home market is often portrayed as a gigantic opportunity for existing software developers. At present, its exploitation has been essentially limited to games, which have been ported from microcomputers to Nintendo and competing game systems. The missing element for hypermedia has been appropriate delivery systems. While Nintendo systems offer some possibilities, they are limited to ROM and RAM-based data. Another home system which should be released soon is called CD-I for Compact Disc Interactive. The CD-I format is supported by Philips, Sony, and others. It defines a standard format for images,

sound, and data. Apple has not joined in supporting CD-I, which (along with their future-oriented video tapes) suggests they see a different path for addressing the home market, presumably one with proprietary hardware.

Attending to the home market is important if you are interested in the "big payoff". The potential market for a really spectacular, microcomputer-based product is minuscule in contrast to one which could be used on any television. The amazing abundance of VHS-formatted video tapes and video stores provides some insight to this market.

Home-oriented hypermedia products do not yet exist, but they will. Will the CD-I player be the vehicle which brings interactive information into the home, or will the invasion await a richer, more powerful standard? Nobody knows, but lots of really BIG companies are betting many millions on CD-I and competing formats. Presently, there are CD-I authoring systems available from Sun-Phillips and Matsushita. The work required to create a CD-I product and that to create a large microcomputer-based hypermedia product are quite similar. It would seem prudent for smaller developers to adopt a wait-and-see attitude toward CD-I. It seems clear that eventually a market will be developed for home-based large-scale interactive entertainment/information products. However, small developers cannot create this market, and are better occupied developing viable products for the present market. The home market should really explode when we're able to distribute hypermedia projects using broadcast media or cable systems. There is a fundamental problem associated with the bandwidth required to allow thousands or millions of local users to control the flow of data. We can assume (perhaps naively) that these difficulties will be surmounted. Perhaps local storage and control via advanced, in-home entertainment systems will hold the solution—as a user moves into a given category of data, a block of data will be transmitted from a central storage library to their local storage unit.

Macintosh Based Opportunities

For now, both system and Hypermedia developers are pretty much limited to microcomputer-based delivery systems, and if we are to build businesses producing hypermedia, we had better make the best of the current situation. The remainder of this article focuses on short-term opportunities for developers on the Macintosh computer. There are several different ways in which developers can exploit the concepts of hypermedia. These include:

- Adding hypermedia to existing products of other classes.
- Creating new hypermedia development products.
- Extending or creating tools for existing hypermedia development products.
- Creating information management applications using hypermedia products.
- Creating custom hypermedia projects for corporate clients.
- Creating information products using hypermedia products.

Hypermedia and Existing Applications

As the Macintosh has become more sophisticated, so has the average application. Increasingly, help systems are being perceived as crucial components. This trend will continue, and hypermedia offers an excellent way to add value to existing software which goes beyond simpler models of help. Others have noted the similarities between context-sensitive help and hypertext. Embedding hypermedia-based help into your applications will let novice users access specific, graphical data on steps required or particular operations. An example of hypertext-like help is found in the popular tax preparation product "MacInTax", published by SoftView. This package provides pop-up instructions for each of the different lines on the IRS tax forms. This makes it relatively painless to correctly complete many of the various tax forms. While this is a step in the right direction, simply placing instructions into a product is a small step. Watch for applications which provide more—much more. MacInTax could, for example, include the texts of

popular tax preparation guides, which provide more understandable instructions and advice which helps users make decisions (though there may well be legal constraints on providing tax advice). While Softview created its own method of popping up help, HyperEngine by Symmetry Software lets developers add limited HyperCard stack playing abilities to applications.

HyperCard and VideoWorks Interactive are currently in use by several software publishers for guided tours and product demonstrations. This relates to their excellent abilities to simulate other applications, providing users with a simulated experience in the product. For these tasks, Videoworks is probably better when animation is required and HyperCard is probably better when the project is more information intensive. It's also much cheaper to produce a high quality HyperCard stack than a VideoWorks movie.

The ability to simulate a software package using hypermedia products is also being widely used in the prototyping phase. You can create a functional simulation of almost any product using HyperCard at a fraction of the cost of actually coding it out using C or Pascal. This use of HyperCard has already proven popular in-house at several software publishers. A speaker from Claris Corporation spoke at a recent HyperExpo about their use of HyperCard for prototyping.

As hypermedia technology improves, we will be able to embed complete, comprehensive training packages with simulated trainers right into the applications. Such systems will include voice-over, how-to examples which take the users by the hand and show them how to solve their problems. Hopefully they will begin to move away from the current command-oriented model of Help, and toward user problem orientations.

Another opportunity appears to exist in binding relevant data sets into applications. At present the basic software model is to provide just the tool and let end users generate or acquire their data separately. As the market for software matures, customers will come to appreciate one-stop shopping in their software

products. Products that embed useful data, which makes it easier to effectively use the product, will enjoy a competitive advantage. A highly successful product that illustrates this approach using clip art is Broderbund's Print Shop. Print Shop doesn't use a hypertext or hypermedia model, but a very attractive graphic package could be created by extending this concept with hypermedia.

Opportunities for embedded data sets include management tools with advice on human interactions, bibliographic tools with selected data sets, construction estimating tools with product information, business plan creators with alternative business strategies, travel planners with travel information, CAD packages with embedded building codes, sales support tools with methods of addressing sales objections, etc. Almost any task requires basic information as well as the software tools for managing the information. When the information is common to all users of these tools, an opportunity is created for applications which include hypermedia based data sets for the end user.

Creating New Hypermedia Development Products

HyperCard is bundled free with every new Macintosh. This is great for purchasers of new Macs and HyperCard developers, but its effect on existing and prospective hypermedia system developers is chilling. How can you compete with free software from Apple? It is possible, but difficult. The bulk of the existing companies with alternative Macintosh hypermedia development products already had their products on the market before HyperCard's release or were so far along in the development cycle that to terminate the product was not reasonable. These include OWL International's Guide and Eastgate System's HyperGate.

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HyperCard Scripting Explained

Part 1

An introduction to HyperCard Scripting by Mike Dawson.

This series of articles on HyperCard is due to a rash offer I made to Ewen after he helped me resolve some of the (minor) errors I had made on a HyperCard programme written for TABBS, our bulletin board, called TABSLBY.SIT. If like me you have sat at home (or office) and tried to follow the scripting language from books generally available then a feeling of frustration can easily set in. There are few books available to explain the language in a shallow depth however most are 25% to 50% full of Wow! this is HyperCard. This entails going over the same old things explaining the card, background and stack concept. I hope to explain the fundamentals of this programming language as well as some of the advanced stuff I have managed to learn from bitter experience. In order to avoid the Wow! this is HyperCard bit I will assume that the reader will have got past this stage with classic books like Danny Goodman's The Complete HyperCard Handbook.

In the course of this article we shall introduce all the major concepts with practical examples. Later using the 'tutorial' concept we will build a simple 'Mini-Finder' using HyperCard to illustrate some of these points. For the lazy (I fully sympathise) this programme will be available for you to download, with Ewen's help on TABBS. You may also find it in the APPLE2000 Mac disc if you subscribe and fame befalls me.

The Basic Stuff

HyperCard is called the programming language for the rest of us. Yet it can be daunting to get into for the complete novice or amateur 'BASIC' programmer alike. I speak from experience

having converted to the Mac from my Apple II+. The reason is because it is not a 'top down' or procedural type of language. The phrase of 'top down' is coined because the programme runs from the first line of the code to the last in sequence. The programme may loop back on itself or jump to a earlier or later point or even call a subroutine. What is inexorable about this type of language is the path from start to finish. Examples of this type of language are BASIC, FORTRAN and COBOL. The fundamental difference that must be understood is that HyperScript is a twofold structured programming environment.

The First Structure - Objects

Objects are the major elements in HyperCard. These are the Buttons, Fields, Cards, Backgrounds and Stack. It is through these elements that the stack you wish to create will present the means to show the information required and hence manipulate it.

Events

Events are things that happen in HyperCard like a mousebutton being pressed ora card being opened or closed (i.e. shown or not). Also HyperCard is working for you when it seems that it is doing nothing. There is an "IDLE" instruction so that when nothing is happening on the 'event' front you can make HyperCard go and do something useful, like update the time in a field.

Elements of HyperScript can be located in any of the objects and be triggered by any of the events as decreed by the programmer. The 'language' is therefore distributed around the stack as befits the task to be achieved.

With so many of the objects in differing layers each with a potential programme element within it there is to be expected a precedence of order in which things can happen. This precedence is as follows :

- 1) Card buttons or fields.
- 2) Background buttons or fields
- 3) Cards
- 4) Backgrounds
- 5) Stack
- 6) Home Stack

A HyperCard instruction, lets use a mouse click for an example, will for instance, happen on a button (which is not unreasonable although it could be a field). The following lists the differing positions of the stack elements.

```
Diagram Button - card
           Field - card
           Card
           Button - Background -
mouseUp handler here
           Field - Background
           Background
           Stack
           Home Card
```

If the script to 'catch' the mouse click is placed in any of these object levels, lets say the 'background' level then the mouse click message is detected here, and ignored by the card level. Here the script will intercept the message in the background button. I.e.

```
on MouseUp
  flash 2
  beep
  put "I've detected a Mouse
  Button Press"
end mouseUp
```

The above programme is called a 'handler' as it handles the event of a mouse button being released. It can reside in any of the objects listed above and not necessarily a button. The action of the script is first to intercept the mouse click. The line "on MouseUp" is saying when the mouse button is released or goes "up" then do the following. The following is first to inverse flash the screen twice (flash 2) then to beep the internal speaker once (beep). The forth line 'put "I've detected a Mouse Button Press"' tells HyperCard to put the message "I've detected a Mouse Button Press" into the message box for you. HyperCard is smart, and as

we have not specified where to put the message (i.e. a field) it assumes that we mean the message box and opens it before inserting the message. This is our first introduction to the inherent "intelligence" of HyperCard.

As mentioned above the mouseUp handler can be in any of the objects so that if you wish something to happen if the mouse button is pressed whilst not over any button or field then place the handler into the card layer. Using this technique a card can also become a button! The only exception is the field which will not accept a mouseUp handler as the cursor insertion point will be activated instead. This can be overcome by simply setting the field text property to locked. The insertion pointer will not be activated and the field will behave as a button with the correct handler.

Before looking at the elements of HyperCard script there are a few basic bits of information that is worth mentioning. First is that the script is not case sensitive i.e. mouseUp is the same to HyperCard as MOUSEUP. The preference is yours. By convention scripts are written in a mixture of upper and lower case to easily read the words used for commands and variable names. So that 'mouseUp' uses the uppercase U to aid legibility. Secondly there are reserved words in the language but although these cannot be used as variables the word can be embedded in a variable without any problems. Therefore 'beepNow' although containing the reserved word 'beep' will be interpreted as a valid variable.

Variables

Variables must be declared by the programmer examples are :

```
add 1 to newVariable
```

The variable 'newVariable' is not implicitly created as if the equivalent script line 'put 1 into newVariable' had been used

```
put newVariable into card field  
"demonstration"
```

As the variable 'newVariable' has already been created the result of the previous line will be put into the

card field named 'demonstration'. If the first line had not been executed then HyperCard will have flagged an error as it would not have come across 'newVariable' before.

It is not assumed that a variable is zero if undeclared as in the BASIC programming language. Having learnt that variables must be declared there only two other basic rules to be observed.

If you are used to declaring variable types as in FORTRAN or BASIC then HyperCard will come as a relief. There are no variable types such as A\$ to denote a string variable or A% to denote an integer as in Applesoft BASIC. HyperCard does the work for you when you declare a variable. i.e.

```
put "1234" into temp
```

will exist as a string variable. Equally if you declare

```
put 1234 into temp
```

Then HyperCard will accept 'temp' as a real variable.

If we were to do a mathematical operation on the string variable 'temp' such as

```
add 1 to temp
```

Then HyperCard will think "Immmm a string with 1 to be added to it. I'll first convert temp to a real variable then add 1 to it.". Again HyperCard is doing the thinking for us, great isn't it?.

Variables exist only in a local context. That is if a variable is declared and used in a handler when the handler is finished then the variables created and used are lost. This is OK if you want to reuse variables in differing places such as card buttons and background fields. If however you wish to transfer a variable to be used from one handler to another then this is a bit of an inconvenience. Help is at hand in the shape of the global declaration statement. By adding one line at the start of both handlers the desired variable can be transferred and used in both areas. The statement for our variable 'temp' is

```
global temp
```

The number of global variables is not limited and the list can be extended by the separation of commas i.e. global temp, temp1, temp2 etc.

Special Variables

HyperCard contains some very special variables of which it is imperative to note. They are 'IT', 'EMPTY', 'RESULT' and 'TARGET'. These have some very special and versatile attributes.

'IT'

This is the one global variable resident in HyperCard. Here global means that the variable 'IT' is used globally and not that the variable is available for transferring information across handlers. Confused? -well 'IT' is the variable returned from various HyperCard dialogue actions. Examples are

```
ask "Where next" with empty
```

This line causes HyperCard to show a standard Mac dialogue box with the message "Where next" and waits for a line of text to be input. Once the return key is pressed the line of text is inserted into the variable called 'IT'.

Another example is -
answer "Where next" with "Home"
or "Nowhere" or "Cancel"

Here HyperCard will put up a standard dialogue box giving the message "Where next" and giving three button options to click on namely "Home", "Nowhere" or "Cancel". Note that the last option becomes the 'default' i.e. if the user presses the enter or return key then this is the action undertaken. It is good policy to use this feature to ensure that the user cannot do any 'damage' accidentally by making the last option the escape.

'EMPTY'

This is the HyperCard equivalent of the null string in BASIC. In our 'ask' statement in the above example the question "Where next" was qualified with "with empty" this means that the question's default answer is 'nothing'. If for instance the line had read :

```
ask "Where next" with "the home  
card"
```


Then the question would have prompted the ready made default "the home card" Once the return key is pressed the 'IT' variable is used to return the users selection can be tested with 'empty' to see if the user has in fact answered with anything at all i.e.

if it = empty then exit to HyperCard

In the above line 'IT' is tested to see if it has nothing in it and if found to be empty then the handler is exited and control is returned to HyperCard.

'TARGET'

This is a more complex feature of HyperCard but is very powerful in what it can achieve in doing a lot of work for you and reducing your scripts. The target is a report to you to tell which button or field has caused the subroutine to be activated. For example if you were to have several card buttons and they did an almost common action then it would make sense to consolidate the scripts of those buttons so that the total size of the coding is reduced. However how would you know which button called the handler located, say, in the background where it would be available for all cards to access. TARGET to the rescue, by comparing the TARGET with a list of known card button names the button causing the handler to run then the script can tailor the action according to need, i.e..

if the short name of the target is "New Button" then.....

Here the 'short name of' is cutting off the designation of the button i.e., the normal returning message of the TARGET is "card button "New Button". As we expect that the button is on the card level we can discard the knowledge of whether the button is on the card or the background.

'THE RESULT'

This is a HyperCard report-back feature to enable the programmer to ascertain if a particular request has succeeded or failed. Also if it has failed, why it has done so. This is very useful for detecting for instance a failure of the 'find' command to make a matched find. Eg. to find the text "Apple" in a

stack background field "computer" a line of script would be :

```
find "Apple" in bg fld "computer"
if the result is "not found" then
  beep
  put "Computer type not found"
  into message
end if
```

With this script HyperCard will dutifully search through all the cards in the stack and match any text in the background field "Computer" that has "Apple" in it. If after looking through all the cards a match cannot be found then HyperCard will normally do nothing but sit there waiting for another command.

If however an immediate test is made as in :

if the result is "not found" then....

The variable "the result" returns 'not found' to explain what has happened to the 'find' instruction. If the test is true, i.e. not found, then the computer will beep to alert the user and then show an explanation of what has happened.

Now we have gone through the bare basics lets have a look at some housekeeping that is essential if HyperCard is not to get out of hand both in speed of operation and the amount of disc space a stack will require. Every time a piece of data is modified or any area of the stack is modified some portion of the stacks size will become waste and can be discarded at will. Note that HyperCard will not do this for you must do it yourself. If you have tinkered in Applesoft Basic then you will have learnt the existence of the FRE(x) command to 'free' up memory no longer used by transient variables. Think of HyperCard doing the same type of thing except the memory held on to is not only in the Mac's user memory but is also 'saved' along with the stack to disc. To find the amount of free space in a stack pull down the objects menu and select "STACK" the resulting dialogue box will tell you the size of the stack as well as the free memory, the wasted space. To remove this wasted space you can do one of three things.

1) pull down the "FILE" menu and select "COMPACT STACK" to

remove the unwanted 'fat' or 2) run a stack called Compactor (available on a club library disc) get HyperCard to do it for you automatically, my lazy man's preferred method. After all you bought a computer to do the work for you, didn't you ?.

Whilst running a stack, open the "OBJECTS" pull down menu and select "STACK INFO". Once open select "Script" and enter the following small programme.

On closeStack

```
if (freemem/1024) > 2 then
  domenu "compact Stack"
end closeStack
```

Now every time you finish with a stack and close it by going to another stack or going to the home stack the following will happen.

1) When the stack is about to close the closeStack message is generated.

2) The closeStack message causes the script above to be run, and this does...

3) a) Checks the amount of free space or 'waste' in the stack

b) if the 'waste' is more than 2 Kbytes then go off and compact the stack. The test for free space size is to prevent the stack being compacted even if there is no free space to remove. Merely compacting a compacted stack is just a waste of time.

Now every time this stack is finished with HyperCard will compact the stack automatically for you. 🍏

MacWrite II: Smart Quotes Character Substitutions

If you find that MacWrite II produces the wrong character when a quotation or apostrophe mark is typed, deselect Smart Quotes in the Preferences window. You are probably using a specialized font (like Symbol or Zapf Dingbats) that does not have the type of "curly" quotes that MacWrite II substitutes whenever Smart Quotes is on. Instead of getting the symbol that is normally accessed with a quotation or apostrophe, you will get the symbol that is normally accessed with one of the Option key combinations. 🍏

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Court Finds in Apple's Favour; Copyright Infringement Case Moves Closer to Trial

Apple Computer, Inc. today announced that Judge Vaughn Walker of the U.S. District Court in San Francisco has strengthened Apple's case by clearing the way for a trial in Apple's copyright infringement suit against Microsoft and Hewlett-Packard.

The judge denied motions from Microsoft and Hewlett-Packard and upheld Apple's claim that the Macintosh™ computer audio-visual displays are original to Apple. The judge also held that the major portions of Macintosh audio-visual displays--overlapping windows and icons--are not licensed to Microsoft and Hewlett-Packard.

"We're pleased with this favorable ruling and look forward to moving to the core of this case--the issue of copyright infringement by Microsoft and Hewlett-Packard," said Edward B. Stead, Apple's vice president and general counsel. "With these issues behind us, we believe our case is strengthened. We're confident that the remaining issues in this case will be resolved in our favor."

The ruling came in response to Apple's assertion that certain Macintosh audio-visual displays used in Windows 2.03 were original to Apple and not covered by the scope of Apple's and Microsoft's 1985 agreement. Those audio-visual displays include overlapping windows and the appearance and manipulation of icons. The court upheld that assertion.

Both Hewlett-Packard and Microsoft argued that the Macintosh user interface is not entitled to copyright protection because it had been copied from earlier programs, principally Xerox Star and SmallTalk. The court

rejected this argument, stating that the Macintosh user interface programs were original works, independently created by Apple. The court found that there was "no evidence" indicating that Apple's work had been copied from Xerox Star or SmallTalk.

Apple filed suit against Microsoft and Hewlett-Packard in March 1988, to protect its copyrighted Macintosh audio-visual displays against copyright infringement by two products: Microsoft's Windows 2.03 and Hewlett-Packard's New Wave. Apple's audio-visual displays make the Macintosh personal computer unique and distinctive, and in computer parlance, extremely "user friendly."

Judge Walker's decision today did not determine the issue of copyright infringement, which will be resolved in the next phase of litigation. A status conference will be held to determine the schedule for the resolution of the remaining issues in the case.

Press Contact: Christopher Escher Apple Computer, Inc. (408) 974-2202



Technical Note #273

SCSI Termination

#273: SCSI Termination

Revised by: Rich "I See Colours" Collyer June 1990
Written by: Rich "I See Colours" Collyer April 1990

This Technical Note discusses SCSI termination on the Macintosh, including the new rules of termination which are necessary with the advent of the high-speed Macintosh IIx.

Changes since April 1990: Fixed a typographical error which represented μF as mF .

Why Is The Terminator After Sarah Connor?

One of the features of the Macintosh IIx is a new SCSI chip that provides SCSI data transfer rates up to three megabytes per second, faster than any existing Macintosh model. To achieve these transfer rates, components on the Macintosh IIx logic board are smaller and faster, requiring different termination configurations than previous Macintosh models. The Macintosh IIx requires the use of a combination of the following three new termination parts. Users need to use these parts instead of existing SCSI termination part to configure a IIx with SCSI devices.

Apple SCSI Cable Terminator II.

The Apple SCSI Cable Terminator II is a revised external terminator for the Macintosh IIx. All finished goods Macintosh IIx systems ship with this terminator in the box. It is easily recognized because of the black colour. Under no circumstances should one use more than a single Apple SCSI Cable Terminator II on an external SCSI chain—doing so may damage the logic board.

Internal SCSI Termination Block.

The Internal SCSI Termination Block provides

internal termination resistance for Macintosh IIx systems without internal hard drives. All finished goods systems shipping without internal hard drives have the Internal SCSI Terminator Block installed.

Internal SCSI Filter.

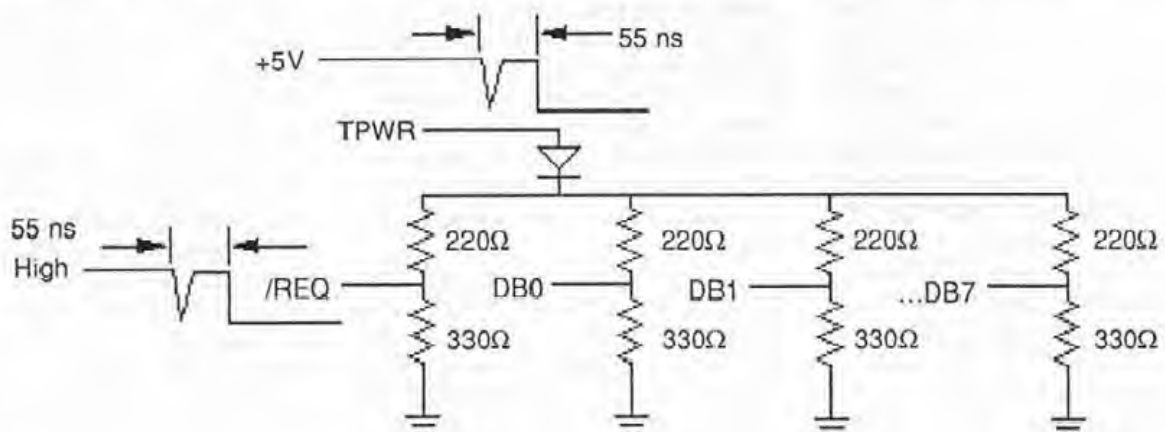
The Internal SCSI Filter provides termination capacitance for internal Macintosh IIx hard drives that shipped prior to March 19, 1990. All finished goods systems shipping without internal hard drives have the Internal SCSI filter installed.

New termination configurations

The new termination configurations are simple, and you can remember them with a single rule: Macintosh IIx systems with external SCSI chains require a terminator at both ends of the SCSI chain. One is internal to the system, while the second is external, located at the end of the chain.

The reason for the new terminator is that on the Macintosh IIx and future hardware, the SCSI controller chip is a two micron part which makes it very fast. One of the results of this speed is that the chip now thinks that glitches in the /REQ line are real signals. This problem is not likely to show its face on all of the Macintosh IIx machines, but if you have a complaint of your hard drive not getting mounted on the new machine, then you should try a new terminator first. The symptom is more likely to show up on machines with several (three or more) external SCSI devices attached to the computer and long strands of SCSI cables. Figure 1 illustrates the old style terminator with the signal showing the spike propagation.

Figure 1-Old Style Terminator (Gray)



Basically what happens is if a majority of the data lines change state at once, there is a sudden drain on the TPWR line which is resistively coupled to all of the lines, including the /REQ line. This sudden drain causes a spike in the line, and this spike is propagated into the /REQ line and to the SCSI controller chip. The newer SCSI controller chip in the IIfx interprets this spike as a /REQ signal and starts reading data from the data lines; however, since the data lines need 55 ns to settle, the data which the controller chip reads is junk.

All internal hard disk drives sold by Apple with the IIfx and later machines have the Internal SCSI Filter installed; however, most third-party drives do not yet have this filter installed and must be modified by a qualified service provider to work correctly with the IIfx.

How To Stop The Terminator

Since the problem is caused by a drop in the TPWR line, the fix is to smooth out the line. One only need add a 2.2 μF capacitor and a 0.01 μF ceramic capacitor as illustrated in Figure 2. These capacitors act like a battery and provide a little extra current when it is needed. This extra current results in a smoother signal, which the SCSI controller chip does not interpret as a /REQ signal.

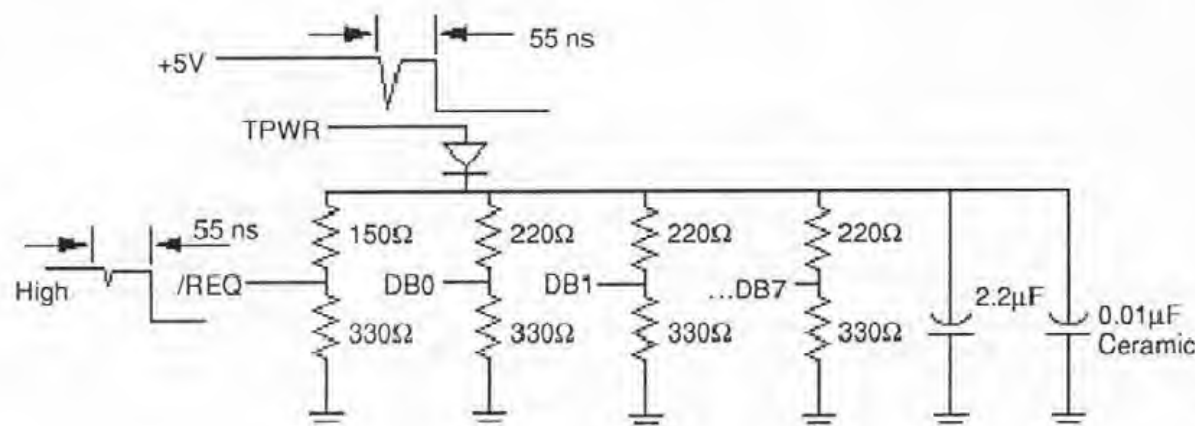


Figure 2-New Style Terminator (Black)

This new type of filter is only for internal hard disk drives. The Macintosh IIfx ships with a new and improved external terminator (black in color), so hard drive manufacturers do not need to worry about external termination. Apple also ships an internal filter with every IIfx which handles the capacitance problem. This internal terminator has two parts. The first is the resistors for the terminator. This part should already be installed on all internal hard disk drives, so it is only used for CPUs which do not have an internal hard drive. The second part of the internal terminator is the capacitor filter. This filter should be installed on the hard disk drive end of the SCSI internal cable. If your hard drive implements the new capacitors, you can, and should, install the capacitor filter—you cannot have too much capacitance.

External Termination

If you manufacture an external SCSI device and you include termination in your device—**don't do it**. You should not provide termination in an external SCSI device. The only terminator which should be outside of a Macintosh IIfx is Apple's external terminator, and it should be at the end of the SCSI chain. If you make a SCSI terminator, it is most likely incompatible and may cause damage to the hardware or the data. If your SCSI device cannot connect with Apple's terminator, then you should provide an adapter which allows your SCSI device to attach to the provided terminator.

Note: A notice in the Macintosh IIfx finished goods box instructs customers to return self-terminating SCSI devices to the service provider to disable termination.

You're Terminated

Not every Macintosh IIfx owner is likely to experience this inconvenience, but a few will. If customers report problems which appear to be termination-related, then the first possible solution is to fix the terminator (for external devices) or implement the filter (for internal devices). If you manufacture an external SCSI device which is self-terminating, you should remove it. This incompatibility will continue with future hardware products and could even surface on the Macintosh IIfx.

New Education price for LC

Apple Computer UK has formulated a special price for Macintosh LC systems as follows: Colour Macintosh LC System (2/40 Macintosh LC with 12" colour monitor and keyboard) Standard Education Price £1258 SPECIAL PROMOTION PRICE £1085 Mono Macintosh LC System (2/40 Macintosh LC with 12" mono monitor and keyboard) Standard Education Price - £1185 SPECIAL PROMOTION PRICE - £985 This offer is available through Apple Authorised Education Dealers and lasts until 29th March. Customers with further enquiries should dial 100 and ask the operator for Freefone Apple.

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Datadesk International MAC101 Keyboard

A review by John Kishimoto

Introduction

The venerable classic Mac has been with us for quite a few years and even with the introduction of the Mac Classic, will continue to do sterling service in many businesses and homes. One of the disadvantages of owning an older Mac has been the awkwardly shaped keyboard which follows none of the standard key layout conventions currently used in other computers. Its high profile also makes typing difficult at times. In addition, if you have to move from IBM PC compatible computers, to the 128/512/Plus Mac on a regular basis, the change in keyboard layout becomes a handicap. This is where the MAC101 keyboard comes to the rescue.

The MAC101 is available in ADB and Platinum/Beige 128/512/Plus versions. International versions for German, French, Spanish and of course UK markets are also available.

Keyboard

The MAC101 has, as its name implies, 101 keys in total. The MAC101 key layout (and size) is virtually identical to those used by PC's and Apple's extended keyboard. The only difference is in some of the keycap legends.

The top row is occupied by a Cancel/Undo (ESC equivalent) key and fifteen programmable function keys. The main alphanumeric keypad cluster is nearly identical to the Apple extended keyboard. Only the 'Control' keys are missing. This could be a problem when trying to send control characters to remote systems. Command and Option keys are located on either side of the space bar. To the right of the alphanumeric keys are two clusters, one of which contains cursor keys and the other editing keys. Unlike Apple's extended keyboard, MAC101 replaces the 'help' and 'forward del' keys with 'Paste' and 'Cut'. The other 4 keys of this cluster (Home, End, Page Up and Page Down) are identical to the Apple keyboard.

The numeric keypad layout is more akin to the IBM style. It employs elongated '+' and 'Enter' keys and does

not have the '=' key. The 'num lock' key, however, is replaced by a 'clear' key which also functions as a 'Window Lock'. 'Window Lock', as in the IBM PC's 'Num Lock' disables the numerics and enables the special functions defined on the keycaps. As in the PC keyboard, the numeric keys have legends for Cursors as well as Home, End, Pg Up, Pg Dn, Ins and Del.

Finally, there are three lights indicating Caps Lock, Window Lock and Power On.

The keyboard is well made, with rubber feet, and adjustable inclination. The keys themselves are light and provide, in my opinion, a better 'feel' than the old Mac Plus keyboard.

Macros

Provided with the keyboard is MasterStrokes™ a macro utility program. Unfortunately, Macromaker (supplied with the System software) cannot assign keystrokes to the MAC101 keyboard.

MasterStrokes™ is an INIT which is essential to enable all the special keys on the keyboard and requires Finder 6.0 or later. This program is available in two versions, ADB (SE, II) and non-ADB (128K-Plus). The MasterStrokes™ Cdev provides a sequence of Command, Option, F15 keystroke combinations called 'Hot Keys', which activates File, Keyboard and Record functions. These combinations can be altered by the user.

The File function presents the option of opening an existing macro file, or creating a new one. The Keyboard function allows the editing of preloaded macro files and the Record function records keystrokes and mouse-menu interactions for function key assignment.

Two macros 'Current' and 'Universal' can be active at any one time. The 'Current' macro is one dedicated to the application currently being used. By adding the suffix '-101', these macros will automatically activate when the application is loaded. The 'Universal' file is a global

macro always in operation. This includes editing function keys, as well as special functions such as shutdown, reboot and window scrolling.

Macro editing, via the 'Keyboard' Hot Keys enables on-screen definition of function keys, as well as Option/Command key combinations. The lack of a Control key does, however, limit the number of possible keystroke combinations. In addition to function key assignments, this macro enables specific two letter abbreviations to be replaced by whole phrases. Very useful when word processing.

For functions which do not have program specific keystroke assignments (such as Erase Disk or Shut Down) the mouse record mode can be used. By using this method, the 'Universal' macro has a variety of pre-programmed functions, including one familiar to PC users. The Mac can be rebooted by pressing Command-Option-Del (Control-Alt-Del on the PC).

The package

In addition to the MAC101 keyboard, the package includes a disk based manual and MasterStrokes™ for the SE/II and Plus/512/128. Also supplied is an order form for erasable templates for the function keys. A cable is not supplied with the keyboard. The MAC101 is also covered under a 2 year limited warranty.

Compatibility

A MAC101 keyboard has been in use with my Plus for about 3 months without any hardware compatibility problems.

John Lim's Moiré 3.02 is somewhat incompatible with MasterStrokes™. This screensaver routine is activated whenever one of the page scroll keys is pressed. Of the remaining half dozen or so INITs I use on a regular basis, none exhibited any unusual problems.

I do not know if the MAC101 keyboard and software are compatible with the Classic, LC and IIsx. Potential users with these computers should check before buying this keyboard.

Conclusion

If you have difficulty with your old 128/512/Plus keyboard, or want to upgrade your standard ADB equipped version, the MAC101 keyboard provides a good cost effective solution.

MasterStrokes™ is more than adequate to replace MacroMaker and greatly enhances the performance of various packages.

Only one word of warning. Make sure you have sufficient desk space to cope with the increased keyboard size.

The Hewlett-Packard Deskwriter

Rather like the Curate's Egg by John Stanier FACI

I acquired my Deskwriter as a result of a discount offer in Apple 2000 by that helpful and friendly firm, Supreme Mac Software Ltd of Birmingham, and it proved to be an immense step forward in quality - provided that one used the right paper - over my previous printer, the ImageWriter I. The Deskwriter is called "The Poor Man's LaserWriter", although at £862.50 VAT inclusive discount price it isn't exactly given away with Green Shield Stamps. "Poor" is a relative term!

At first I used the Deskwriter for my desultory correspondence through the Royal Snail and for printing out the various scientific and astronomical calculations with which I sometimes pass my time. That the Ink Cartridge needed changing every few months didn't ring any alarm bells.

Then I took on the production of a small Club Journal (the International Tape & Cine Society, if you must know), a publication of some 32 A5 pages, mostly well-spaced text, but with a few diagrams and half-tone scanned photographs. This involved printing eight A4 sheets, both sides for each copy. I deemed the limitation of the Deskwriter to 50 A4 pages a day to be no trouble, as the tiny print run of 70 copies could be spread out over a month, as copy became available and editing, galley proofing and printing could be fitted in between household chores. My wife is ill, awaiting major surgery and I have to cover all the household chores.

That's when I began to find out the cost of printing on the Deskwriter, since I knew precisely just how many pages I was printing in any given period. One print run, half completed, used 9 ink

cartridges, 2 in one day. Yes, NINE cartridges, £157.50 worth, just to print 640 A4 pages, single sided. That works out at an astronomic 24.6 pence per A4 page. The worst day cost an incredible 44 pence per A4 page, just for the ink!

Ray O'Connor of SMS advised that such excessive ink cartridge consumption should be referred to Hewlett-Packard, and a telephone call to the number he gave got a quick response.

"A Deskwriter with excessive Ink Cartridge usage. Oh, yes. Our Engineer will call tomorrow. Your reference is 8055 46452".

I stayed in all next day, but no Engineer turned up and in a telephone call late that afternoon

"...H-P were sorry. She had had words with the Engineers scheduled to call, who said that he was busy, that a Retrospective Modification was required, and he wasn't coming..."

I politely expressed my opinion of H-P's organisation and the call was promptly disconnected. As I write, I still have the problem unresolved and I have no idea as to when, if ever, H-P will deal with it.

A thought struck me then. Naively, I believed that registering the purchase ensured that Retrospective Mods would be advised automatically. Otherwise, why waste a stamp in registering?

Obviously, this astronomical cost of printing could not be sustained out of my shallow pocket - I don't get recompensed for producing the Magazine - and with H-P seemingly leaving me to battle on alone, I turned to trying to recharge the empty cartridges. The possibility was broached on p 29 of the June 90 Apple 2000, and mentioned again on p 29 of the Aug 90 issue. A cartridge holds 19ml of

ink and the cost of the "proper" ink, strongly advised in the August note, at £12.88 for 17ml, 90% of a refill is barely economic, being three quarters of the cost of a replacement cartridge. A little spillage with an unsteady hand and you could well exceed the cost of a new cartridge.

So, it was back to Fountain Pen Ink at around 47 pence a cartridge refill, plus a penny or two for the inevitable spillage. The technique proved messy, but feasible, and I improved my technique with practice. A friendly G.P. provided a small plastic syringe. A hypodermic needle fitted on the end of the syringe would have made matters easier and probably quicker, but my friendly G.P. wasn't that friendly. Perhaps your neighbourhood junkie would provide a needle, but sterilise it first! Rubber or plastic gloves, or disposable gloves are essential - it can be messy if you haven't a very steady hand.

Syringe a blob of ink on the green arrow top and squeeze the black sides of the cartridge firmly with the thumb and first finger and an air bubble emerges from the hole. Brush this air bubble aside with the tip of the syringe (or the air goes back into the hole!) and release the pressure on the sides, and the blob of ink will dutifully disappear into the hole. Repeat, and gradually the contents of the syringe are loaded into the cartridge. An empty cartridge weighs in at 27 grams, and a full one at 46 grams, but I've given up trying to get the last drops in and compromise at 37 to 40 grams. With practice, I got the time down to around 6 minutes.

The ink doesn't seem critical. Quink or Skrip Ink seem to work equally well, and it's difficult to see any difference from the original ink, though perhaps the pen ink spreads fractionally more than the original ink. A cartridge seems to last just as long (or should that be "just as short"?). How many times a cartridge can be reused before one or other of the many contacts fail, only time can tell.

All in all, the Deskwriter is admirable if you only need to do the occasional letter or article, but outrageously expensive for anything else - unless you are prepared to reuse the ink cartridges.

AppleXtras Mac 8

Disk 418 AppleXtras Mac 8

Compact Pro

Compact Pro™ is a Macintosh application which lets you reduce the size of many of the files on your computer by "compressing" the data in the files. If you transfer files between computers using modems, you can save time and money by first compressing the files first since compressed files usually take significantly less time to transmit. Compact Pro also supports "archives", a collection of files and folders combined into a single unit.

Features:

- Advanced compression algorithm typically reduces file size by 50%.
- Files and folders may be stored together in "archives" which further reduce storage space and simplify file management.
- Automatic segmentation of archives makes it simple to build archives which are larger than a single disk.
- Optionally builds "self-extracting" archives.
- Supports file compression as a background job under MultiFinder™.

Requirements:

To use Compact Pro, you must have a Macintosh 512KE or higher model (Plus, SE, SE/30, II, IIfx, etc.), and you must be running System file 4.2 or higher. Compact Pro requires 499K bytes of free memory to operate.

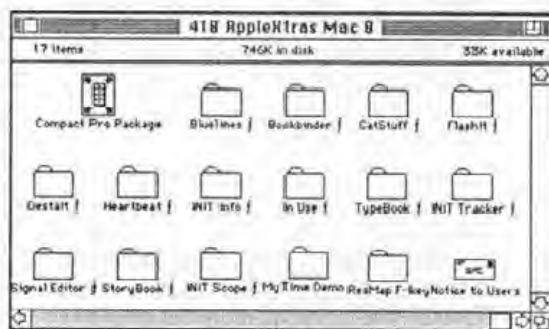
Compact Pro can store up to 1500 files and folders in an archive. Segmented archives are limited to 255 segment files.

Bluelines with Word 4.0 and PostScript

A small file from Ricardo Davis which draws margins in light grey on the page from Word 4.0. The PostScript code is in the header of this file, it can be placed in the text if desired. The PostScript style is in Hidden Text, the "Show Hidden Text" option of the "Preferences..." command must be used to inspect the code. For more information about using PostScript in Word see pages 284-288 in the MS Word User's Guide.

Bookbinder Stack

Bookbinder is a HyperCard stack for creating "book"-style stacks. These books contain a Table of Contents, Index, Title page, and any number of additional pages for text or graphics. The items listed in the Contents and Index are "hot" - i.e. clicking on one brings up the appropriate page. Pages contain optional footnotes which also may be "hot", and the user may insert "bookmarks" to get back to interesting



pages at a later session.

The stack is useful for educators writing electronic textbooks, or for persons wishing to write a manual to accompany some software.

CatStuff 2.0 Stack

CatStuff 2.0 is a hypercard stack to catalogue files on floppies. It understands stuffit (.sit) and compactor (.cpt) format, so you can compress files you save. Works like library card catalogue. Has find command. Freeware by John Lockhart.

Flash-It CDEV 1.3

This is version 1.3 of Flash-It ScreenCapture CDEV/INIT (previous version was V.1.2B2). It defines three HotKeys each of which performs a function concerning saving screens, printing from Clipboard etc.

Gestalt! 2.0

This application uses the Gestalt trap (\$A1AD) available in System 6.0.4 and later to show various info about your Macintosh. See IM VI, chapter 3 for

more info.

HeartBeat for Pyro!4.0

This is a Pyro! 4.0 module. If you don't own Pyro, then this bit of code is completely useless to you. If you do own Pyro, the make sure to pick this up - it will make your Mac look like an ECG machine.

In Use CDEV 2.0

The newest version of the In Use cdev which allows for different indicators for each drive attached to your machine.

INITInfo 4.2 in MS Word format.

INIT-Scope is a free INIT/cdev by David Sumner which watches the activities of INITs: which traps they patch, which globals they change, which VBL procs they install, etc.

INIT Tracker INIT 1.0

This is INITTracker 1.0, an INIT which produces a "snapshot" of all of your active INITs, useful for tracking down INIT conflicts and debugging INITs.

MyTimeDemo(TM) is a demonstration version of MyTimeManager(TM). The demonstration version doesn't print or save files, nor does it open files. Nearly all other functionality is complete (reminders, to do list, various views etc.)

ResMap FKEY

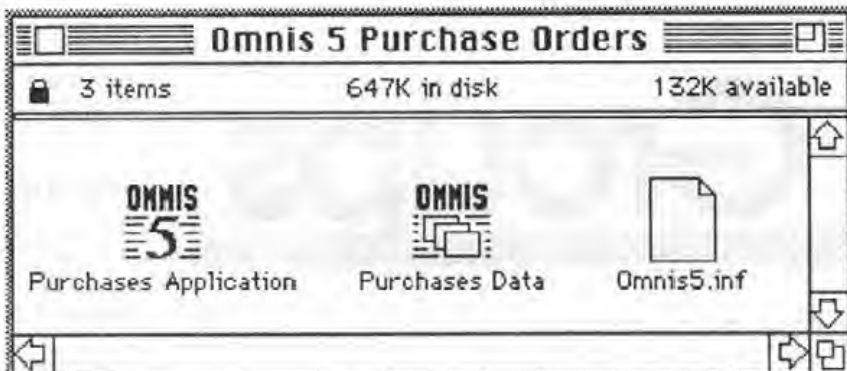
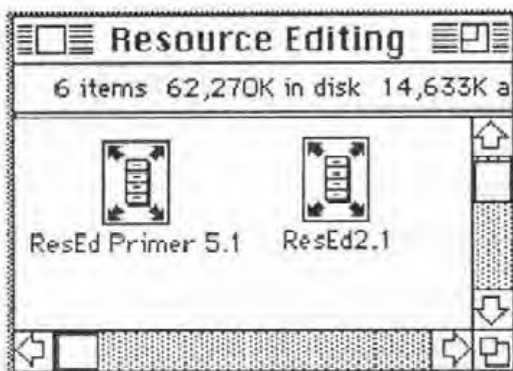
SignalEditor is a signal processing editor/analysis application. Using either pre-recorded signals or recording directly from Farallon's MacRecorder sound digitizer, SignalEditor is capable of editing and analyzing the signals in both the time and frequency domains.

Storybook Stack

Storybook is a HyperCard stack which provides an easy push-button means of creating adventure stories like Amanda Goodenough's "Inigo Gets Out" series. That is, the stories consist of several pages containing invisible "buttons". Clicking on a button location causes a sound effect and/or a new page to appear. Storybook is useful for children and HyperCard novices.

TheTypeBook ©1990 by Jim Lewis. TheTypeBook is a Mac utility which aids in the creation and maintenance of a typeface reference book. This type of reference is extremely popular in the Graphics and Typesetting Industries. It helps people select typefaces by demonstrating the various artistic attributes of each face on a printed page. TheTypeBook is compatible with virtually all printers.

Mac Library



Disk 419 Resource Editing

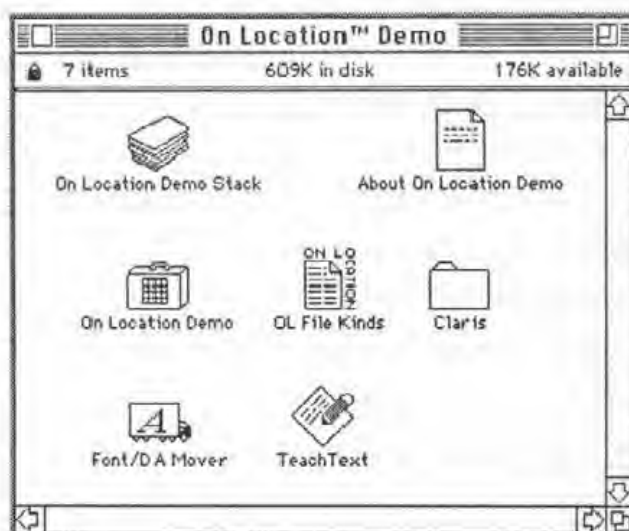
The screen dump at the top of this column shows the contents of Disk 419 as despatched. Both files are self-extracting compressed files containing ResEdit 2.1 and HMG™ ResEdit Primer 5.1. Just double-click on them to extract the files, however you will need extra disk space to save the larger extracted files on. You should end up with those shown above.

Disk 420 On Location Demo

The three dumps nearby show the contents of this disk and two screens from the Demo Stack.

Disk 421 Omnis 5 Demonstration Disk

This sampler provides you with an application which was designed using Omnis 5. The Purchses application on this disk is a complete purchase order system which will enable the user to enter supplier details, record purchase orders and produce printed purchase orders. To run this sample application you require at least a Macintosh Plus, SE or Macintosh II with at least 1MB of RAM.



User Groups

London Region

ESSEX GROUP

CONTACT - Pat Bermingham Tel : 01279 451 111
VENUE - The Y.M.C.A., Victoria Road, Chelmsford
MEETS - Third Friday of every month

HERTS & BEDS GROUP

CONTACT - Norah Arnold Tel : 0494 511 111
VENUE - The Old School, 1, Branch Road,
Park Street Village, St Albans, Herts.
MEETS - 8.00pm on the first Tuesday of each month

KENT GROUP

CONTACT - Richard Daniels Tel : 01893 451 111
VENUE -
MEETS - Contact Richard

LONDON APPLE II GROUP

CONTACT - Chris Williams Tel : 01 462 451 111
VENUE -
MEETS - Contact Chris

LONDON MACINTOSH GROUP

CONTACT - Maureen de Saxe Tel : 011 462 451 111
VENUE -
MEETS - Contact Maureen

M25 BUSINESS MAC GROUP

CONTACT - Jim Panks Tel : 01893 451 111
VENUE - Sir Mark Collett Pavilion, Heaverham Road,
Kemsing, Sevenoaks, Kent
MEETS - Phone Jim for details

SOUTH EAST ESSEX MAC GROUP

CONTACT - Mick Foy Tel : 01279 451 111
VENUE - D.P.S. Acorn House, Little Oaks, Basildon,
Essex
MEETS - First Monday of each month

South

POOLE MACINTOSH USER GROUP

CONTACT - David Huckle Tel : 01252 451 111
VENUE - Deverill Computers (dealer)
Itec House, 34-40 West Street, Poole, Dorset
BH15 1LA

SOUTHAMPTON

CONTACT - Geoff Parson Tel : 0703 451 111
VENUE - Contact Geoff for details

DORSET APPLE USER GROUP

CONTACT - Ron Hoare Tel : 01252 451 111
VENUE - Stuart Magnus & Co, Station Rd. Broadstone

Wales and West

BRISTOL GROUP (B.A.U.D.)

CONTACT - Malcolm Ingsley Tel : 0117 451 111
VENUE - Decimal Business Machines
Three Queens Lane, Redcliffe
MEETS - first Wednesday of each month

HANTS & BERKS GROUP

CONTACT - Tel :
VENUE - Thames Valley Systems (Apple Dealer),
128 High Street, Maidenhead, Berkshire,
SL6 1PT Tel : 0628 451 111
MEETS - 7.00pm on the second Monday of every month

MACTAFF - SOUTH WALES MAC GROUP

CONTACT -
VENUE - Apple Centre South Wales, Longcross Court
47 Newport Road, Cardiff
MEETS - Contact Apple Centre

Midlands

CAMBRIDGE APPLE USERS GROUP

CONTACT - || Ian Archibald Tel : 0223 451 111
Mac Richard Boyd Tel : 0223 451 111
VENUE - Impington Village College, New Rd, Impington,
Histon.
MEETS - Fortnightly during term time with both Mac
and Apple II on deck each night.

EAST MIDLANDS MAC USER GROUP

CONTACT - David Nicholson Cole Tel : 0535 451 111
VENUE - School of Architecture, Univ. of Nottingham
MEETS - 1st and 3rd Tuesday of the month at 8 pm

GATEWAY COMPUTER CLUB

CONTACT - Vern Tel : 0115 451 111
Robin Boyd Tel : 0115 451 111
VENUE - Bob Hope Recreation Centre, R.A.F. Mildenhall
MEETS - AMS conference room, Mildenhall base.
Normally at weekends, check with Robin
NOTE : Although the venue is on a service
base it is not in a security restricted area so
the club is open to interested parties.

LEICESTER GROUP

CONTACT - Bob Bown Tel : 0533 451 111
VENUE - Shakespeare Pub, Braunstone Lane, Leicester
MEETS - 7.30pm to 10.0pm on the first Wednesday of
every month

MIDAPPLE

CONTACT - Dave Ward Tel : 0121 551 1111
VENUE - I.T.E.C., Tildasley Street, West Bromwich,
West Midlands
MEETS - 7.00pm on the second Friday of every month

THE MIDLAND MAC GROUP

CONTACT - Ivan Knezovich Tel : 0121 551 1111
VENUE - Spring Grove House, West Midland Safari
Park, Bewdley, Worcestershire.
MEETS - 8.00pm on the first Tuesday of every month

WEST MIDLANDS AMATEUR COMPUTER CLUB

CONTACT - John Tracey Tel : 0121 551 1111
VENUE - Hill Crest School, Simms Lane, Netherton,
Near Dudley.
MEETS - 7.00pm on the second and fourth Thursdays
of each month.

NOTE - This is not an Apple user club, it is a
general interest club which welcomes users of
all machines. There are currently two Apple
user members.

North

BURNLEY APPLE USER GROUP

CONTACT - Rod Turnough Tel : 01274 777777
VENUE - Michellin Sports Centre
MEETS - 2nd Wednesday of each month

CREW COMPUTER USER CLUB

CONTACT - Paul Edmonds
VENUE - Christ Church Hall, Crewe
MEETS - Fortnightly, Fridays, 7.30pm to 10.00pm
NOTE: this is a general interest group with
Apple users among its members

HARROGATE AREA

CONTACT - Peter Sutton Tel : 01937 544444
No active organised group in this area but there
are a number of keen Apple users in contact with
each other.

LIVERPOOL GROUP

CONTACT - Irene Flaxman Tel : 0151 425 1111
VENUE - Check with Irene
MEETS - Second Monday of every month.

THE NORTH EAST APPLE COMPUTER CLUB

CONTACT - Philip Dixon Tel : 0191 277 1111
VENUE - Apple Centre North East, Ponteland Road,
Ponteland, Newcastle-on-Tyne
MEETS - First Wednesday of every month

THE NORTH WEST APPLE COMPUTER CLUB

CONTACT - Ken Dawson Tel : 0151 425 1111
VENUE - The Coachman's, on the A49, about 1 mile
south of the junction with the M62
MEETS - Second Thursday of every month

THE NORTH WEST APPLE USERS GROUP

CONTACT - Max Parrot
Tel : 0151 425 1111, 0151 425 1111
Tel : 0151 425 1111
VENUE -
MEETS - Ring Max

Scotland

EDINBURGH GROUP

CONTACT - Ricky Pollock Tel : 0131 551 1111
VENUE -
MEETS - Meetings monthly, check with Ricky

Postal

APPLE II PROGRAMMERS CLUB

CONTACT - Philip Dixon TEL : 0121 551 1111
VENUE - None established yet
MEETS - No meetings yet, has operated through
postal newsletter published quarterly
NOTE : Philip started the club some time ago based
on a membership fee of £1.00 to cover the cost of
newsletters. Original intention was to concentrate
on BASIC and Assembler programming.

Other Groups

ORPINGTON COMPUTER CLUB

CONTACT - Terry Wheeler Tel : 01892 551 1111
VENUE - G.E.A. Hall, Woodhurst Avenue, Petworth
MEETS - Contact Terry

DONCASTER SOUTH YORKSHIRE

CONTACT - Colin Withington Tel : 01924 551 1111
VENUE -
MEETS - Contact Colin

EAST ANGLIA GROUP

CONTACT - Gordon Freeman Tel : 01263 551 1111
VENUE -
MEETS - Contact Gordon

LEEDS

CONTACT - Bob Miller Tel : 0113 277 1111
- T Velupillai Tel : 0113 277 1111
VENUE -
MEETS - Contact Bob

LIVERPOOL UNIVERSITY MAC GROUP

CONTACT - Alan Boyle Tel : 0151 425 1111
VENUE - Liverpool University, Surface Science Res. Cent.
MEETS - Tuesday lunch times

Club Mémoire Vive is organising the Apple II National Convention in Beauvais on June 15th 1991.

Ron Thompson is prepared to organise a coach trip to the Convention, if there is sufficient support. Look out for details in the May edition of Apple Slices.

If you want to start a group, find out about a group that might be near you, please write or contact John Lee the Local Group Organiser at the PO Box in Liverpool, or phone John Lee on 0151 425 1111.

If you are a local group organiser and have not been in touch with John Lee, please contact John with details of your group, or any changes there may be to the above details.

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*Phone Mike Bridgwater01945 811111

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 - "Introduction to Wordstar" by Arthur Naiman (book)£2.50
 - "The Complete Apple CP/M" by Steven Frankel (book)£2.50
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- *Phone Terry01945 811111

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*Phone P. F. Wilson01945 811111

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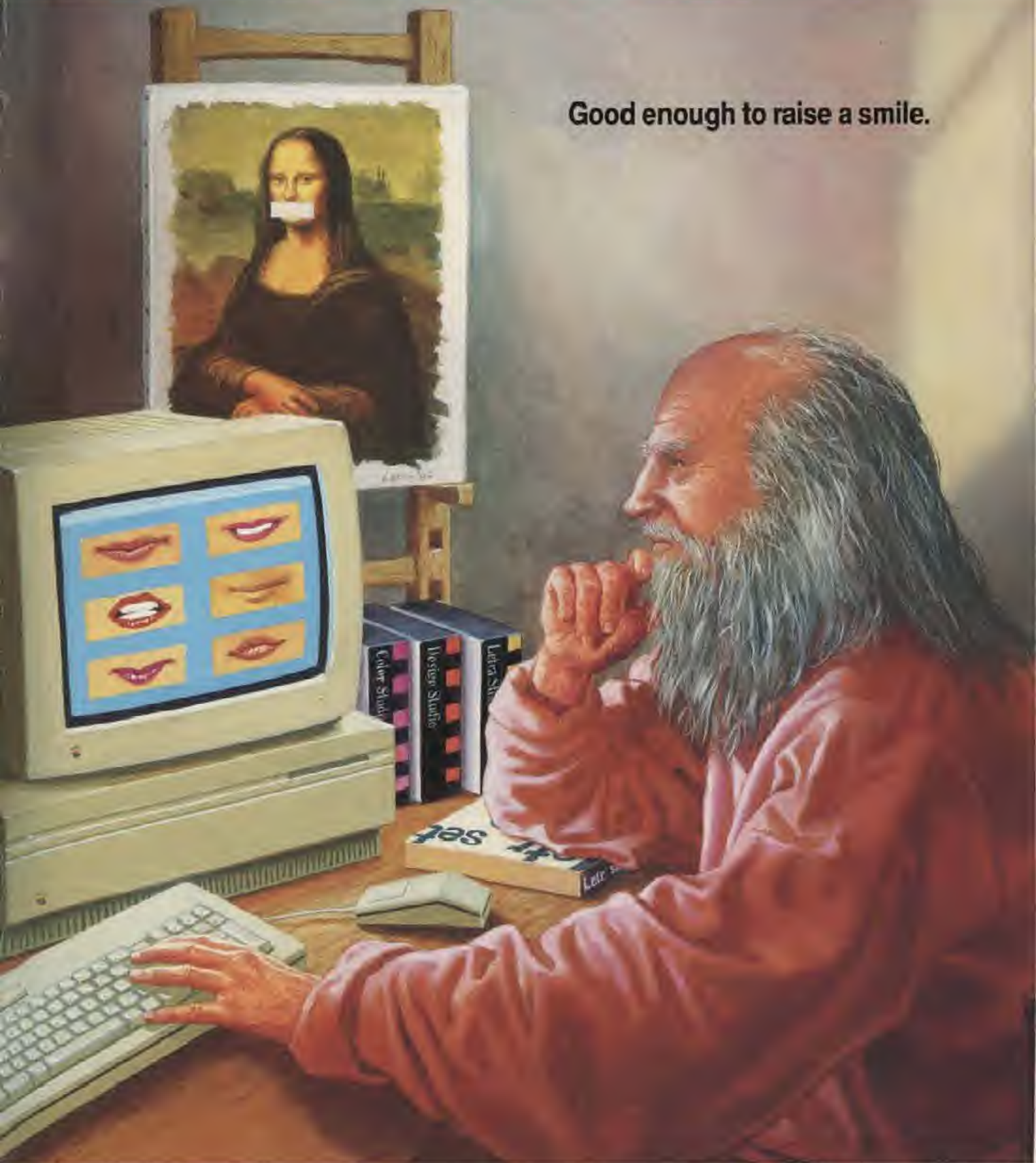
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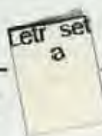
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